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MUSINGS IN THE GARDEN

FIFTY YEARS' ASSOCIATION WITH THE TUBERCLE BACILLUS*

BY

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It has fallen to my lot to enjoy the pleasures of fifty years' relationship with the tubercle bacillus. As an undergraduate I was reared in the pre-bacillary school, on the pathological doctrines of Virchow and his disciples, as expounded by D. J. Hamilton, and the clinical teaching of Williams, Wilson Fox, and Niemeyer. My graduation coincided with the announcement of the discovery of the tubercle bacillus. No need here to dwell on the completeness of the proof and the perfection of the demonstration—the enigma of the ages unfolded in eighteen pages, and tuberculosis relegated definitely to the group of infectious diseases.

As it chanced I came into close touch with the subject while working on the Continent (1882–3). I had my first glimpse of the bacillus in the embryological laboratory in Vienna, where I happened to be working on the development of the trachea. The beauty of the demonstration and the collateral facts awakened my interest beyond recall. That interest has remained unbroken throughout the years, and is to-day no less keen than at the beginning.

Call of the Bacillus

The more one thought of the subject the more obvious it became that tuberculosis as a disease due to infection by a definite organism had to be combated broadly on lines similar to those which had been successfully adopted in the case of other infections. This meant the opening up of a fresh field with wide possibilities. Embryology, gynaecology, and other specialties which had drawn one to Vienna got the go-by. The return to Edinburgh was less encouraging. Little was accepted as tuberculosis apart from the obvious case of advanced "consumption" or "phthisis." Everybody knew everything that was to be known about tuberculosis. If we were to get a move on, the first necessity seemed to be the establishment of a centre for the collection, grouping, and observation of cases at different stages of disease. It was not easy to get the idea understood. The need for such a centre was not admitted, nor were existing medical institutions willing to co-operate. There was a good deal of active and passive opposition.

It became clear that a new type of institution had to be erected to meet the objects in view. Hence the establishment, in 1887, of the Tuberculosis Dispensary as a centre of diagnosis, observation, and guidance, and, more generally, of information in all matters pertaining to tuberculosis as an infective disease. The wide scope and the utility of the institution showed themselves quickly. Within three years of its establishment it was possible, from an analysis of the first 1,000 cases, to deduce many interesting conclusions, and by means of a spot map to illustrate the widespread distribution of the disease in the community. This enforced the desirability of the notification of tuberculosis.

It took long, however, to have the value of the central institution recognized and the pattern adopted. In a discussion at the British Medical Association at Carlisle in 1896 on "Tuberculosis: Its Prevention and Cure," the new procedure was developed by me at some length, but the objective of such purposive effort towards the prevention of tuberculosis seemed to be regarded as of little significance, and no allusion was made to it in the printed report of the meeting. It is pleasant to recall that at the meeting I met Calmette for the first time; he had come to speak on the subject of antivenene. Our meeting had interest in the light of subsequent events.

Gradually the conception of the tuberculosis dispensary as the centre of activities caught on, and dispensaries, of varying quality, were established in several countries from 1901 onwards: in France under the influence of Calmette, Richet, and others, in Belgium (Malvoz), and presently in London, where the first tuberculosis dispensary in that city was established at Paddington in 1909. Thereafter, through the activity of the Central Fund for the Establishment of Tuberculosis Dispensaries in London, eleven dispensaries were erected in metropolitan boroughs.

All the time the field of operations of the tuberculosis dispensary was becoming wider, and its significance more apparent as the *nodal point* in any system for the treatment and prevention of tuberculosis as a communal disease. And so, gradually, there was developed what has come to be known as the Edinburgh scheme—tuberculosis dispensary, sanatorium, hospital for advanced cases, colony, etc.

From 1900 onwards I was fortunate in having opportunities to press the subject in a large number of cities at home, on the Continent, and in Canada and the United States. Then followed the work of the Departmental Committee on Tuberculosis under the chairmanship of Lord Astor, and ultimately the adoption of the uniform tuberculosis scheme throughout Great Britain.

Early Inquiries

In spite of the prevailing view, already referred to, that phthisis was worn threadbare, many clinical and bacteriological questions presented themselves in the early days. The laboratory was at first a very simple affair, adequate for the demands then made on it, including the development of methods of staining, enrichment methods for more easy detection of the bacillus, and various procedures for the rearing of cultures from discharges. Those questions included, more particularly, an inquiry into the actual cause of death in tuberculosis

* Address to the Tuberculosis Society of Scotland on the occasion of assuming the honorary presidentship of the society.

—the subject of my M.D. thesis in 1887—which led to the conclusion, on experimental grounds, that death from tuberculosis is essentially referable to intoxication, which affects the circulation by way of the neuro-muscular system.

And here let me say that the existence of a well-equipped laboratory in close relation with tuberculosis clinical material is a primary need if valuable opportunities for the advance of knowledge are not to be lost. Further, there is much to be said for the establishment—at least in relation to every teaching centre—of an institution on the lines of Southfield, Edinburgh—that is a sanatorium-colony, where cases of tuberculosis at *all stages* and at *all ages*, from infancy to advanced life, can be under observation side by side. Only thus can the natural history of the infection be thoroughly appreciated.

As a learned physician and biologist of the first century A.D., Dioscorides, has said: "Any one who wishes to be a skilful herbalist must observe each plant at every stage of its growth and in various localities."

Notification

The facts obtained within three years concerning the distribution of tuberculosis in the city and the study of environmental conditions impelled me in an address in 1890 to press strongly for the compulsory notification of pulmonary tuberculosis:

"Were it adopted we should soon have most valuable confirmation—or let us suppose the opposite, although I do not think this latter likely—of the statements which have been made regarding the communicability of consumption and the tendency to its occurrence in certain houses and districts. Edinburgh will make a big move, and a move, I make bold to say, which will be speedily followed by many, if her medical officer of health will stimulate the authorities to this further development."

The immediate result was curious. Meeting the medical officer of health coming down the Mound two days afterwards, he remarked: "Don't throw yourself against a stone wall." And eighteen years later, the Chief Medical Officer of the Local Government Board of England, in his volume on *The Prevention of Tuberculosis* (1908), concluded that "it would be inexpedient, unwise, and of relatively little use to advise the general adoption of compulsory notification of phthisis. Public opinion is not ripe for this step, and such notification would remain to a large extent a dead letter." The "inexpedient, unwise, and relatively useless" procedure became the law of the land in 1912. Notification has developed without serious hitch, and, notwithstanding imperfections of personnel and machinery, has played an important part in the control and eradication of tuberculosis.

Tuberculin

It was during the meeting of the International Congress of Medicine in Berlin, in the summer of 1890, that I first heard whispers that Robert Koch was about to add to his earlier laurels by the discovery of a cure for tuberculosis. The actual announcement of tuberculin followed in December of that year. I recall, vividly, the hurried race from Edinburgh to Berlin during the winter session, and the warmth of excitement which contrasted amazingly with the icy coldness of Berlin at that season. Tuberculous patients—mostly in advanced stages—and doctors alike, who had flocked to the capital, were elated with high hopes. The medical world of Berlin itself was ranged in two camps, that of Koch with flying banners, and the other, conservative, swayed by attachment to the older conception of the disease. Yet, curiously enough, it was Professor Virchow himself—great protagonist of the older group—who generously introduced me to Professor Koch, who in turn gave me a small flask of tuberculin for use "primarily in the interest of the Victoria Consumption Dispensary."

You are all more or less familiar with the "ups and downs" of the controversy which raged for long regarding tuberculin in the realm of therapeutics. As one who, ever since the announcement in 1890, has retained unfaltering belief in the greatness of the discovery—second only to that of the tubercle bacillus itself—I crave you will bear with me when I emphasize, in a few words, its far-reaching significance in relation to our knowledge of tuberculosis. I shall confine myself to two broad considerations.

Tuberculin and the Epidemiological Conception of Tuberculosis

From the epidemiological side the knowledge obtained by means of tuberculin has revolutionized our entire outlook on tuberculosis. That seems a strong statement. It it not a whit too strong. The application of tuberculin throughout the countries of the world has burst the conception of tuberculosis as a disease—admittedly infective—occurring in certain individuals, especially at certain age periods, and more prevalent in certain climates.

It has demonstrated the universality of infection, sooner or later, under ordinary conditions, in civilized lands. It has demonstrated that, for the most part, the infection is contracted early in life, and it has shown that the influence of that infection—for better or for worse—is maintained throughout the life of the individual. It has convincingly proved that neither latitude nor climatic conditions, as such, seriously alter liability to infection and the consequences of infection. It has shown us that these are dependent, on the one hand, on the presence of infected persons or cattle in the community, and, on the other, on environmental conditions of varying kinds, which may favour or antagonize the effect of infection in the given individual.

Tuberculin and Diagnosis

The diagnosis of the disease in the individual has, through tuberculin, been placed on an entirely different plane from that previously possible. Observations in the experimental animal and in cattle, as in the human subject, have shown that the *fact* of infection may be determined within a very short period of the *date* of infection. The value of this in relation to experimental work is of first-class importance. For the farmer the tuberculin reaction is the basal fact on which rests the possibility of establishing a tubercle-free herd. It is indeed fundamental to the eradication of tuberculosis from the bovine population, an attainment pre-eminently desirable from the agricultural, not less than from the medical, point of view.

With these facts in mind it seems extraordinary that, in spite of strong and repeated advocacy of the application of tuberculin to the human subject, the efficacy of the proposal has been so little appreciated. We know that tuberculosis is likely to occur sooner or later in all family groups. We have in our hands a means of determining exactly—that is, within a few weeks—the date when infection is contracted. This knowledge is pregnant with meaning for the future of each individual; it makes possible the interpretation of events, the significance of which would otherwise be missed. The means by which the information is obtained is simple, free from pain, and free from risk of any kind.

My plea has long been that this test—confirmatory or otherwise of an event of such importance—should be carried out in routine fashion by every family practitioner at successive intervals from the period of infancy onwards. The chief value of the test lies in the determination of the *approximate moment* of infection. To wait

for the application of the test until some doubtful issue presents itself, or until school age, is to wait too long and to lose most of the advantage. From the moment that a positive reaction has first been given both doctor and parent are placed in possession of an invaluable key to the meaning of further events in the child's life. From countless observations I am convinced that, if the key be understood and applied properly, it is possible thereby to anticipate and exclude the graver consequences of the initial infection. I confidently look forward to the time when such procedure will form part of the ordinary preventive practice of the family practitioner. Recognition of the possible effects of tuberculization, and the timely adoption of methods of *de*tuberculization, would mean the gradual disappearance of the grosser forms of tuberculous disease—both skeletal and visceral.

Turn again, for a moment, to the immediately therapeutic side. This was the central point round which the more material expectations revolved when tuberculin was first announced. In 1890 clinicians and pathologists were chiefly concerned with pronounced changes in tissue and function. The debacle which followed was chiefly due to exaggerated hopes. It seems almost incredible to recall the aspect of patients who, in late stages of disease, flocked to the tuberculin flask as to a sacred pool of healing. The diseased lung, frequently disorganized beyond recall, was to be reintegrated as by magic and the flickering life of the intoxicated body refreshed and stabilized at command. The unscientific attitude met its nemesis in the post-mortem room. Professor Virchow said to me he had never seen such grossly congested organs in all his pathological experience.

The effective value of tuberculin had not yet emerged—although in justice to Koch it should be recalled that, from the first, he spoke of its application to early cases. Time was required for the realization that the value of tuberculin lies essentially in its power of early detection, and that its properties are exercised especially in the way of limitation and prevention of spread.

Looking through the records of the continuous use of tuberculin during more than forty years, in hospital and private practice, I remain deeply impressed by the mass of evidence pointing to its therapeutic efficacy. It will suffice to recall that I have seen tuberculous disease in almost every part of the body yield remarkably during the continued use of tuberculin. By way of examples may be cited tuberculous ulceration of the epiglottis (on account of which tracheotomy had been performed); tuberculous infiltration of the ventricular band, obstructing respiration to such an extent that thyroidectomy had been recommended; renal tuberculosis with involvement of ureter and bladder; large tuberculous masses in the abdomen; and glandular tuberculosis (in some cases with alarming pressure symptoms), for which extensive operation had been repeatedly undertaken. Many such cases have reported themselves from time to time without any sign of retrogression.

Examination of Contacts

One of the earliest developments in connexion with the tuberculosis dispensary was the systematic examination of family groups, or, as it was called in early days, the "march past" of the contacts. The "march past," as we baptised it for rhetorical purposes, was anything but a formal affair. It took time and involved careful discrimination on physical evidence—all this before the introduction of tuberculin tests. It was the careful systematic examination of these family groups which led me to lay especial stress on thorough examination of the lymphatic system at every available point, and enforced the significance of minor degrees of glandular enlargement.

It was especially interesting to observe the support obtained by the tuberculin test for views regarding the wide dissemination of tubercle among children which had been formed by me in pre-tuberculin days by application of the older physical methods. Resting on earlier methods one had made the statement (vide The Anti-Tuberculosis Programme: Co-ordination of Preventive Measures, Washington, 1908) that 30 per cent. of school children (unselected) presented stigmata of tuberculosis. These figures, when reported, were made light of by some authorities. When tuberculin came along, its application in routine fashion among children went to show that the percentage reported as tuberculous on the older line of evidence was much within the mark. The systematic examination of contacts with the aid of tuberculin is one of the most vital parts of the work of the tuberculosis dispensary, and will continue to be so until such time as it becomes the duty of the family doctor to make the routine tuberculin tests at the successive intervals of which I have just spoken.

Mode of Entrance: Misleading Conceptions

The extended observations it has been possible to make during so many years—clinical, pathological, and experimental—have growingly ripened my belief that the view usually held regarding the contraction of tuberculosis by the entrance of bacilli through the respiratory tract, with resulting primary focus in the lung, is narrow and misleading. Repeated experimental observations have convinced me that tubercle bacilli can pass into the body by a variety of channels, and that, while the passage of tubercle bacilli through the skin is commonly associated with induration at the point of inoculation, the passage of bacilli may occur through mucous membrane at almost any point, leaving little register of disturbance at the point of entrance.

All these observations go to emphasize the views I have taught for many years, and which I developed in the introductory address given to this society at its first meeting in November, 1921. In that address I summarized the conclusions previously formed by me as to the stages of infection in tuberculosis, and to these I adhere to-day:

"While, if entrance occurs through the skin, the event is commonly registered by a definite sore, an obvious lesion is seldom traceable when inoculation has been effected by way of the mucous membrane, as may be the case at any point in the alimentary tract from the lips to the anal orifice, or in the respiratory tract from the nostril to the ultimate alveolus.

"The absence of local lesion is likely when infection occurs, as it oftenest does, during the tender period of developing childhood. At that date the mucous surfaces are rapidly absorbent and succulent, and the entrance of the tubercle bacilli may leave little, if any, trace. Theoretically, especially at that age, the possibility of entrance at any point of the mucous surface must be admitted, but the greater vulnerability of certain points, notably the tonsillar region, including the posterior nares and fauces, will be kept in view."

Since the date of the first meeting of the society I have repeated a number of observations on slightly varied lines. They all lead to the same conclusion, that, by whatever channel the tubercle bacillus obtains access to the body, whether through the skin or mucous membrane, its further passage throughout the system is effected for the most part by lymphatic spread. This is the case in the infant and young child, as it is the case in the calf and other animals. In both instances I am satisfied that the tubercle bacilli are not, for the most part, swallowed or inhaled (as is usually believed), but are introduced by more immediate passage through the buccal or nasopharyngeal mucous membrane from the contents

of these cavities, to which bacilli have obtained entrance in the course of fondling, feeding, etc. The commonly accepted division of the channels of infection into respiratory and alimentary is, in my judgement, arbitrary, and untenable in view of the facts. That infection can be effected in the experimental animal by either route there is no manner of doubt. It must be kept in mind, however, that the conditions under which spontaneous infection is effected differ widely from the methods of the experimental laboratory.

Undue Dominance of the Lung in the Problem of Tuberculosis

Paradoxical as it may seem, the tuberculous lung has been a chief obstacle to the development of a scientific conception of the natural history of tuberculosis. From earliest times the attention of the physician—as also of the man in the street—was directed towards the classic picture of the consumptive patient gravely ill or dying from disease which was apparently centred in the lung. "Phthisis" was regarded as essentially a disease of the lung.

In the circumstances it was most natural for the pathologist, like the clinician, to direct his attention to the lung as the chief subject of investigation. Generation after generation has approached research from the same angle. Observers have differed only at successive periods in their interpretation of the morbid appearances. The dominating position accorded to the lung has obscured the truth. The clinician has seldom got away from the lung as the central feature for study and care. Tuberculous manifestations elsewhere have been regarded as complications of what was conceived to be the primary or essential lesion. Face to face with appearances which implied, or might imply, tuberculosis in other parts of the body, he has continued to turn to the lung for corroboration or otherwise of the diagnosis. And at the post-mortem table there has been much the same outlook.

This faulty attitude has been strongly impressed on me as a physician by the frequently recurring reference from colleagues in special departments regarding obscure conditions of ill-health, or less common appearances in particular organs, as to whether the lungs showed evidence of primary disease. This outlook has continued throughout successive decades in my experience, and is still largely prevalent. It is a grave misconception of the order of events.

The misconception has not only coloured observations at the bedside and in the post-mortem room: even the experimental pathologist has been influenced unduly by the older line of thought. It was assumed that the diseased lung became infected by the direct entrance of the bacilli through the respiratory passages. Attempts to reproduce the disease were arranged on these lines; I did a good deal of that sort of thing in the early days. With the quantities of bacilli used for experiment it was speedily found, as might have been expected, that pulmonary tuberculosis could be produced in this fashion. On the other hand, it was speedily shown that when tubercle bacilli were introduced in quantity into the gastro-intestinal tract, tuberculous infection was likewise readily induced—some observers regarding it as the readier avenue. Thus arose the opposing doctrine of respiration *versus* ingestion. Nor has the difference between the two schools been adjusted.

Again, the assumption that infection is effected for the most part by way of the respiratory passages led to the vexed question of "dust" *versus* "droplets." Here, too, confusion of issues occurred, and the very natural conclusion resulted that either means was possible, provided that the dust or droplet contained the essential tubercle bacillus.

Lessons of Comparative Pathology

The sequence of events in the human subject is not dissimilar to that in cattle. Involvement of the lung is, for the most part, a late visceral manifestation of an infection contracted very simply at a much earlier date. The prevailing habit of separating between pulmonary tuberculosis and non-pulmonary, which at one time may have served some purpose, is unscientific and misleading. No less so is the curious habit adopted by many of speaking of "surgical" tuberculosis as opposed to "medical."

Similarly fallacious is the attempt to associate certain manifestations of tuberculosis too precisely with one or other type of bacillus. Twenty-five years ago, the last time I met Robert Koch, he denied most stoutly, and with not a little heat, that bovine infection of the human subject could result in pulmonary tuberculosis. Involvement of the lungs, he maintained, was always referable to infection by the human type. He regarded the two or three isolated statements made up to that date that bovine organisms had been recovered from pulmonary tuberculosis in man, as due to inaccurate observation. To-day, thanks especially to the insistent labours of Drs. Stanley Griffith and Munro, we have abundant proof that Koch's dictum was wrong.

In this connexion the post-mortem appearances in cattle at various ages are of particular interest, as is likewise the sequence of events in the inoculated animal. I have seen a congenitally affected calf, born of a mother whose uterus was literally studded with tubercle, presenting on the fifth day after birth, as the sole evidence of disease, a tuberculous gland at the hilum of the liver and another in similar relation to the spleen. We have fed a calf, born in a tubercle-free herd, and ascertained by tuberculin test at the date of experiment to be non-tuberculous, with milk to which an emulsion of tubercle bacillus (human) had been added, and in due course the tuberculin reaction became positive, and post-mortem examination revealed tuberculosis limited to the retropharyngeal gland.

Frequently at the slaughterhouse calves of 2 to 3 months old are to be seen with the lymphatic system literally packed with tubercle, and yet not a trace of involvement of lungs or pleura which, in the adult cow, constitutes ultimately the characteristic lesion. (For abundant opportunities for observation in this sphere I have been much indebted to the kindness of Mr. Arthur Gofton, F.R.C.V.S., chief veterinary inspector at Edinburgh.) The lessons of the slaughterhouse are most convincing—namely, that, apart from congenital disease, which is relatively uncommon, infection in the bovine species and in pigs commences in the glands related to the buccal cavity and the pharyngeal region, and this is followed by gradual extension throughout the lymphatic system. The mediastinal glands of the young bovine, which by reason of their size are much more easily studied than those in the human subject, may frequently be found grossly involved by tubercle, while hardly a trace is to be found in the lung.

The sequence of events in bovine tuberculosis is of particular interest. Prior to the recognition that tuberculosis in cattle was due to Koch's bacillus, emphasis was chiefly laid, and, indeed, is still laid by clinical veterinary officers, on the characteristic involvement of lungs and pleura. Yet the collective facts of that jealously guarded post-mortem theatre, the slaughterhouse, afford convincing evidence that involvement of the lung and pleura is actually one of the later results of tuberculous infection. Pulmonary tuberculosis is to be expected in the tuberculous cow, but it is relatively uncommon in the young calf.

I have no wish to press the facts of comparative pathology beyond the legitimate limit. They should not, however, be lightly discounted. They should be kept well in view in interpreting the facts of human pathology.

Better Perspective

I am, of course, well aware that the majority of opinion, pathological and clinical, favours—almost takes for granted—the view that human infection occurs generally by way of the respiratory passages, and that the primary focus of disease is to be expected, and is generally to be found, within the lung. I have followed with close interest the observations of distinguished workers in this part of the field, among whom members of this society hold an honoured place.

None the less, in this moment of recollection and survey, it seems right to make it clear that, starting both on the clinical and on the pathological side with the belief that in the great majority of cases the lung was the seat of primary infection, I have been constrained by an overpowering weight of evidence in my own experience —clinical, pathological, and experimental—to relegate the lung, from this point of view, to a secondary place. From what I have said regarding the undue dominance of the lung in current thought regarding tuberculosis it must not be supposed that I make light of the preponderating place properly accorded to pulmonary tuberculosis in the sphere of practical medicine. It is all the other way. As things now stand, pulmonary tuberculosis, which commonly occupies the final act in the tragedy begun by the silent entrance of the bacillus into the human body, demands still the utmost attention. So long as the entrance of the bacillus remains unwatched and unnoticed, and its progress remains unchecked, so long will the story of disaster tend to develop and pulmonary disease continue to be frequent.

The resources of medicine have, however, shown that the invading organism may be checkmated at many points before the last act is reached ; and to effect this is the chief aim of the preventive measures which are embodied in the tuberculosis scheme of this country. And happily, even when the curtain seems raised for the last act, many variations have now been introduced into the old-world story. Pulmonary tuberculosis has been largely robbed of its more ominous features by early diagnosis, by the adoption of the physiological measures of the sanatorium, and by methods of frontal attack which are now possible by the combination of surgery with medicine. Thanks to modern technique, " defeatism " has disappeared and disaster is daily averted.

It is long since I satisfied myself, from innumerable observations, that infection in the child is effected, for the most part, neither by respiration nor by ingestion, as generally understood, but by more immediate recurring contact between the child and the infected individual, as in fondling, kissing, feeding, etc., and, likewise, of course —as most convincingly demonstrated by John Fraser, Mitchell, and others—through less direct contact with the cow by means of infected milk. Introduced from whichever source, the bacilli entering the mouth or nose tend to linger about the gums (teeth), and especially about the faucial and nasopharyngeal regions, from which they may pass through the mucous membrane without very obvious disturbance, and thence reach the lymphatic circulation ; while in other cases the bacilli may pass lower down in the gastro-intestinal tract in swallowing tubercle-containing milk. Sometimes, doubtless, entrance may occur through the respiratory passages, but, on many grounds, I believe the latter to be relatively infrequent.

The first evidence that infection has been contracted may be found most frequently in enlargement of one or more, often several, glands in the neighbourhood of the point of entrance, especially cervical glands. The enlargement is, as a rule, slight, and discoverable only by careful palpation along the likely lymphatic lines (not usually the obvious swelling, discovered by the observant mother, or the gross disturbance which commonly leads to a visit to the surgeon). The lymphatic involvement I have in view is of finer character, progressing insidiously from point to point. The search for this forms the first line of investigation in the case of a young child. By the time this glandular involvement is determinable the tuberculin reaction will generally be found positive, and the fact established that the child has been " tuberculized."

I might cite endless examples from children in illustration of these significant points. Let me recall to you a remarkable illustration from comparative pathology which carries the evidence further than is commonly possible in the child. The case, that of a cow, was recorded some years ago to the society by Dr. Simpson and myself (*Transactions*, 1924–5). The animal, one of our tubercle-free herd, which had always passed the tuberculin test, was grazing one day in a certain field into which, through carelessness on the part of a neighbouring dairy-keeper, a sick cow, recently under treatment for " pneumonia," was allowed to enter. " The dairy-keeper's cow was discovered there in a dying condition the following morning and, immediately after removal, died from generalized tuberculosis. These two cows, after the invariable manner of their kind, were seen to have licked each other by way of greeting. They were in contact in the field together nine hours." Our own cow, which on April 24th and on all previous occasions had passed a double tuberculin test, was tested some months after the incident referred to, on October 24th, and gave a very positive reaction. It was slaughtered immediately thereafter, and the necropsy showed definite tuberculous involvement limited to the retropharyngeal glands.

Let me resume briefly as follows. Tuberculosis, like other infective processes, is of simple origin. There is a moment in time when the tubercle bacillus passes the protecting barrier—the mucous membrane most commonly. This is followed by a latent period (primary incubation) while the bacillus is establishing itself within the lymphatic circulation. After an interval, not very certainly defined (perhaps three or four weeks) objective evidence may be found (clinical or post-mortem) in glandular enlargement, isolated or spreading. At this stage the process may be, or at least may appear to be, arrested.

Later, with wider extension throughout the lymphatic system, all kinds of incidents may occur—for example, extension of infection through propinquity, rupture into some passage, sac, or viscus (or there may be local exudation), any of these giving rise to obvious clinical effects. Finally, with the passage of bacilli into the blood stream, whether by the natural channel or more abruptly, as by entrance from a caseating focus or in the course of surgical operation, the final catastrophe of miliary spread is made possible.

The points in time at which such incidents occur, or reactivation of an existing focus takes place, vary endlessly, according to the resistance offered by the infected individual. This in turn is largely governed by environmental conditions (using that term in a wide sense), at successive age periods, or through accidental circumstances such as the advent of other infections—for example, measles, whooping-cough, and, it may be, through injuries. The occurrence irregularly of reactivation or extensions is usually registrable by clinical signs and symptoms. On the vexed question of the part played by the fresh entry of tubercle bacilli from without, time will not allow me to enter. In no subject in medicine

is it more desirable to maintain the biological outlook. We must think in terms of decades and generations. Once the tubercle bacillus has obtained a foothold whether, as rarely, during intrauterine life or at some subsequent date from infancy onwards, the possibilities resulting from bacillary implantation are manifold, and should be kept in view by the thoughtful physician without fuss or exaggeration.

If the influence of the harboured bacillus be frequently beneficial, making for immunity against further attack from outside, it is to be borne in mind that the bacillus is highly resistant, and may remain dormant for many a day, encapsuled perhaps in some out-of-the-way corner, still capable of reactivity and reproduction, and, given favouring conditions, of spread in all sorts of directions. No need for me in a company like the present to dilate on those favouring conditions which occur in numerous ways and at numerous stages in conventional human life. These occurrences explain much that were otherwise hard to interpret in the life-history of the tuberculous individual and in mortality tables. It is when you have watched in countless cases the " ups and downs " in the persistent struggle between the invading bacillus and the resisting forces of the host—strong or weak as these may be from time to time—that you begin to understand the mystery of the drama of tuberculous infection, action and reaction, and the interlocking of successive events.

These are a few of the reminiscences and musings which remain with me from fifty years' wandering up and down in the wonderful garden. These rambles have occupied a large part of my life and have brought both pleasure and solace. You have given me the privilege of recalling these happy times aloud. Your kindness in inviting me and in listening has enhanced the pleasure of recollection. I hope that I have not wearied you or unwittingly trodden on anyone's toes, or seemed to make light of the labours of others in the garden. Their friendliness and good will have made me happy, and my admiration of their successful efforts has been unbounded.

PARASITIC DISEASES COMMON TO MAN AND ANIMALS*

BY

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Human beings have acquired their parasites from two main sources: from their own simian ancestors and from environmental circumstances, the most important of which is association with animals. It is not always possible to place any given parasite immediately in its own special category—inquiries into the distant origin of animals and plants must always contain an element of speculation—but most of them can be catalogued with some degree of accuracy. To the first category belong such parasites as malaria, filaria, and pinworms, while to a borderline group between it and the second category belong the hookworms and similar forms, which have very close relations in domesticated animals, but which, acquired in very early days, have now become exclusively human. It is interesting to observe that the human *Ascaris* and *Necator* are probably undergoing a reverse process of evolution, and are becoming parasites of pigs as well as of man.

The purpose of this paper is to discuss parasites which even now are being carried to man from animals, especially animals to be found in Canada. In parenthesis it may be mentioned that all such forms as occur in animals in Britain also occur in Canada. Like the white man in North America, they also were immigrants. However, this continent provided its own quota, and the forms discussed here include a few which are not found in the United Kingdom.

For purposes of convenience we may consider these parasites in the following groups: (I) those which live as adults both in man and in animals ; (II) those which live as adults in man and as larvae in animals ; and (III) parasites which live as larvae in man and as adults in animals.

GROUP I

The group of parasites living as adults in man and in animals can be subdivided into two, the first division including forms which are sufficiently frequent in human beings to be considered as " normal," and the second including forms only rarely found in man, which are obviously " accidental " parasites.

" Normal " Parasites

The broad tapeworm (*Diphyllobothrium latum*) of man and carnivores has been known for a long time in Europe, where its modern endemic focus is in the Baltic area ; it also occurs, however, in Switzerland and Ireland. It was introduced to the North American continent many years ago, and is now located mainly around the Great Lakes and other lakes from Ontario to Alberta. A number of cases of infection with this parasite have been recorded from New York, but the source appears to be pike from the Great Lakes. The incidence of the tapeworm in Canada is rapidly increasing, and the fact that it infects a variety of wild mammals, such as bear and mink, as well as domesticated ones makes control much more difficult.

The eggs of the tapeworm are passed in the faeces into water, where in due course they hatch. The larvae are swallowed by minute water fleas (*Diaptomous oregonensis*), in which they undergo a certain amount of development: this is completed when the first host is swallowed by a fish. Quite a number of fresh-water fish can serve in this way, but the most important is the pike (*Esox lucius*). The infective stage is reached in the fish, especially in summer, and particularly in medium-sized or smaller specimens. Infection results, of course, from eating raw or improperly cooked fish. This worm is generally associated with a form of anaemia, but the latter is certainly not present in all cases, although there is evidence that the worm does cause a small increase in size of the red cells. There is a distinct eosinophilia in the early stages of the infection ; this reaches its maximum about the time of maturation of the worm, after which it rapidly diminishes almost to normal.

The presence of the parasite in Canadian fish is of some importance, and every effort should be made at control: (1) by keeping summer-caught pike off the market ; (2) by cooking or freezing fish for consumption by both man and animals ; (3) by discouraging the feeding of raw fish to dogs ; and (4) by periodically dosing the latter for tapeworms. In the presence of wild reservoir hosts absolute control is difficult, but any steps to prevent the pollution of lake water with infected faeces should be of assistance in reducing the incidence.

The human whipworm, *Trichocephalus trichiuris*, which is quite cosmopolitan, but nowhere very common or serious, also occurs in pigs, while the dwarf tapeworm, *Hymenolepis nana*, which is fairly common in the Southern States, is probably identical with the form found in rats and mice in Canada. The dog flea occurs

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frequently on man, and the human flea on the dog, so that both of these parasites may also be included in this section. The human lice, on the other hand, are peculiar to man, and none of the animal forms can find more than a very temporary lodging on him.

Abnormal Parasites

A very large number of parasites of animals have at one time or another been recorded in man. Many of these are of purely academic interest, but a few occur with sufficient frequency to enable us to regard the animals as "reservoir hosts" for these parasites.

The number of species of *Paragonimus* is still far from being settled, although the consensus of opinion is that probably all are variants of a single form. However, it seems advisable to retain the name *P. kellicotti* for the species of lung-fluke which occurs in North America. Here the normal host is the mink, but it is also common in the musk-rat, and it has been recorded from pig, dog, cat, wild cat, goat, and man. Its distribution in Canada is still very incompletely known, but it seems to be fairly widespread, especially in the east.

The eggs, coughed up, are swallowed and passed to the exterior in the faeces. In about three weeks they hatch, and the larva gains admittance to the operculate snail *Pomatiopsis lapidaria*. This snail is amphibious, so that the eggs on damp ground, as well as in water, have an opportunity of continuing their life-cycle. From three to four thousand cercariae emerge from the snail in about three months after infection, but they develop further only if they are able to penetrate into the thin chitin between the segments of crayfish (*Cambarus spp.*). In the second intermediate host they proceed to the heart region, where they become encysted. (In the Asiatic species they are often found in the musculature.) These continue to develop after encystment, and several weeks may elapse before they become infective.

Infection is by eating the crayfish in an uncooked condition, when the young flukes penetrate the intestinal wall and migrate directly to the lungs. Needless to say, many worms never reach their final habitat, and they are occasionally found alive in various other parts of the body.

Human beings may act as accidental hosts for the liver-flukes of sheep, but this is very rare, and there is reason to believe that many of the recorded cases, which were diagnosed from the presence of eggs in the droppings, were not really infected. The eggs are merely contaminations of liver eaten as food, and are in course of leaving the body. The liver-flukes usually found in man and carnivorous animals belong mostly to the family Opisthorchidae, and while the only genus commonly seen in human beings is *Opisthorchis* (including *Clonorchis*) there is every reason to believe that, given the opportunity, any one of the members of this family could attack human beings. All appear to be fish-carried, and in certain parts of the Far East and in Northern Asia and Northern Europe, where conditions are quite analogous to Northern Canada, human infections are very common. The two genera so far found in North America are *Opisthorchis* and *Parametorchis*; there is increasing evidence that the latter is of considerable importance to dogs in the North. A heavy infection causes progressive weakness, emaciation, and anaemia, and its significance in an animal which provides the sole method of transportation for many months of the year can well be understood.

The members of this family, in addition to the usual snail intermediary which all flukes require, have a second intermediate host in fish. The cercariae which escape from the snail encyst on scales or in the flesh of various species of fish, and the definitive host is infected by eating this. The available evidence suggests that any fish-eating animal may be infected. Man owes his freedom, as a rule, to cooking, as heat quickly destroys the cysts. For this reason fluke is not common in human beings here, but it must be admitted that very little search has yet been made for it. Accordingly, the parasites must be considered as of potential human, as well as actual veterinary, importance.

Dipylidium caninum is an exceedingly prevalent parasite in dogs and cats, which also occurs in children; in fact, it is probably the commonest human tapeworm seen in Great Britain. The intermediate stage is found in fleas and dog lice, and these are occasionally swallowed by children. It is not a very dangerous parasite, but its presence in children indicates that, hygienically, all is not as it should be. Children also become infected with several species of ascarid worms found in dogs and cats. Here, of course, infection is produced by swallowing the embryonated egg, and implies opportunities for faecal contamination of food or utensils.

The genus *Trichostrongylus* includes a number of very small parasites related to the hookworms living in the alimentary tract from the stomach to the caecum. They have a wide geographical range and live in a great variety of mammals. Their main hosts are domestic ruminants and, possibly, horses, but there are a number of records from man; probably these could be greatly increased if examinations were made more frequently. The life-cycle is somewhat similar to that of the hookworm, except that infection is mainly by ingestion. The eggs resemble those of the hookworms, but can be fairly easily distinguished. It is doubtful if these parasites do much harm to human beings.

Man is sometimes infected with mange mites from the lower animals (particularly *Sarcoptes*), chiefly from horses, cows, and dogs. All the species in this genus are similar morphologically, but strains appear to have evolved for each species of host, and so human infections are generally very amenable to treatment with sulphur dressings. The human strain is much more resistant to treatment, however.

GROUP II

Of the parasites living as adults in man and as larvae in animals *Taenia solium* and *Taenia saginata* are both exclusively human parasites in their adult state. The larva of the former, however, is found in pigs (*Cysticercus cellulosae*), whereas that of the latter occurs in cattle (*Cysticercus bovis*). Their distribution, therefore, corresponds with the distribution of these two animals, but their frequency depends on whether or not meat products are habitually eaten uncooked or only slightly cooked. *Taenia solium* is, accordingly, commoner in Germanic and similar communities, whereas *Taenia saginata* is more often seen than *Taenia solium* in Anglo-Saxon peoples. Both occur in Canada, although their distribution is somewhat erratic. Osler found *Taenia solium* in Montreal, and there are recent records of its local frequency in the Slav communities in the west. It is, of course, a rare parasite in Great Britain and elsewhere among people of British extraction—reports to the contrary notwithstanding—because of their habit of overcooking pork. *Taenia saginata* is found in Great Britain, and, although we have little information of its exact distribution in Canada, it also is most frequent in the west; however, it is quite generally distributed elsewhere, although never very common, as in Britain. *Taenia solium* is quite a dangerous human parasite, as its larval stage can develop in man as well as in pigs; it does not always choose the musculature, but is found subcutaneously or in the central nervous system. Quite a number of cases of lunacy are attributable to it. There is no such danger with *Taenia saginata*.

The Trichina Worm

The most important of the parasites which produce trichinosis in man is the trichina worm, or *Trichinella spiralis*. The parasite itself was only recognized in 1828, when Peacock observed the larvae in London, but it was thirty years later before Zenker was able to show its connexion with the serious disease with which we now associate it; at one stage it caused more public apprehension in Germany than did cholera. For some ten years American pork was excluded from Germany on this account, and from this the present very efficient American system of meat inspection directly resulted.

Canadian as well as British meat inspection ignores the possibility of trichina infection of pork, and no attempt is made to search for it. However, in Europe, elaborate measures are taken and large staffs and special apparatus are employed for this purpose. The importance of trichina

infection depends entirely on the habits of the people. Where raw, undercooked, or smoked pork is customarily eaten it is a parasite to be feared, and it is in nations with such habits that we encounter it most commonly. Where, however, as in Anglo-Saxon countries, it is customary to overcook all pork and pork products, the dangers are negligible ; this precaution is probably more effective than the most perfect system of meat inspection, which, after all, may merely lead to a sense of false security. In the United States, where a fair proportion of pigs are infected, there have been about 2,000 human cases reported since 1842, although the actual numbers infected but not diagnosed must be very much higher. Most cases are traceable to the consumption of raw sausage or ham, usually prepared at home or in small establishments. Where pork is prepared on a large scale the dilution of the worms is generally such as to make infection negligible and too small in amount to cause disease. Practically all these American cases were confined to people who had still retained their Central or South European habits, while those of British or French origin were not affected. Quite a number of cases have had their origin in the eating of bear flesh, and we have found the trichina worm in a variety of wild carnivores. It is, of course, essentially a parasite of flesh-eating mammals, and in certain parts of the United States it is fairly common in dogs and cats.

Generally, the disease is chronic in the pig ; in fact, there may be no symptoms at all and the flesh is unchanged macroscopically. It is unnecessary here to discuss the course of the disease in man, but it may be of interest to draw attention to the frequent diagnosis of typhoid fever or " ptomaine " poisoning in the acute cases, and to " rheumatism " in the subacute later stages of trichinosis. Like most parasitic infections, in the earlier stages there is observed considerable eosinophilia, which, in this case, may reach as high a figure as 40 per cent. Sir William Osler was probably the first to draw attention to the great diagnostic value of this fact.

The distribution of the trichina worm in Canada is unknown, as it is in Great Britain. Human cases are occasionally recorded, but it must be remembered that symptoms are directly proportional to the numbers of parasites ingested. Cases with slight infection probably show no symptoms at all, are not likely to come to the attention of the physician, and still less likely to be diagnosed as trichinosis.

GROUP III

All the parasites living as larvae in man and as adults in animals are obviously " accidental " forms, although some are of very great importance, such as hydatid cyst, fluke larvae causing cercarial dermatitis, and hookworm and other larvae causing " creeping disease."

Hydatid Infections

Echinococcus granulosus as an adult lives in carnivorous animals, the dog being considered the commonest host, but wild Canidae are often infected and play no small part in its spread ; cats are only infrequently infected. The intermediate hosts are legion ; practically any mammal may harbour the hydatid cyst. Sheep are most often infected, but horses, pigs, and wild ruminants, such as the moose, are also important hosts. The disease is therefore essentially one of pastoral countries. There sheep constitute a large reservoir from which dogs are continually infected, and the opportunities for human infection are thus enormously increased. Although in human pathology hydatid is generally studied in the adult, it is in youth or even in infancy that the disease is usually contracted. Accordingly, in most cases, the cyst of the adult is one already old—a fact which explains the great proportion of abnormalities found in human hydatids.

It has been considered that drinking-water was the commonest source of infection, but echinococcus eggs, like most other helminth eggs, do not float in water in the state in which they are usually passed in the faeces. The drinking of surface water should not, therefore, cause infection. Contagion occurs most frequently through contact with dogs, especially by acquiring dried eggs on the hands from a dog's coat contaminated with dried faeces. Faecal contamination of foodstuffs, particularly vegetables, is also probably a common source of infection.

Cercarial Dermatitis

The infective stages of a number of trematodes gain admission to the host by actually penetrating the skin. The most important of these are the blood-flukes or bilharzia worms. If they penetrate the skin of the correct host they continue to develop to maturity ; if, however, they happen to have entered the skin of an unsuitable host, they die. Unfortunately, whether they are in the correct host or not, they cause a pronounced reaction at the site of entry, and the name " cercarial dermatitis " has been given to the resulting lesion.

There are no human flukes in north temperate climates which have such a mode of entry, but quite a number of wild birds and mammals are so affected. Their larval stages are common in many lakes, both in Canada and in the United States, and closely related forms occur in many parts of the British Isles and elsewhere. These minute cercariae have consequently become a considerable source of annoyance to bathers, and in some localities are so bad that fully half the people entering the water become affected. The condition starts with a prickly sensation a few minutes after exposure to infection, and urticarial blotches quickly develop round the site of entry. The itching may be intense, and papules or even pustules appear. In as little as four or five days the sores disappear with simple treatment, but in some cases they persist from four to seven weeks. The lesions vary to some extent with numbers, dirtiness of the water, and scratching, as well as individual susceptibility, but the history generally makes the origin of the disease obvious.

Analogous to cercarial dermatitis is the condition called " creeping eruption," in which a variety of parasites of lower animals penetrate the skin of man, and, finding the environment unsuitable, move about in or under the skin. Chief among these are immature hookworms of dogs and cats. While a number of these are present in northern latitudes, we have few records of the condition from there. It has been shown that relatively high temperatures, sufficient to cause visible perspiration, are favourable for the disease, and this may account for the fact that it is most frequently found in the south.

CONCLUSION

Of the parasites commonly found in man in north temperate climates only pinworms (possibly ascarids) and lice are exclusively human. Practically all the others are associated in some way or another with lower animals. The broad tapeworm carried by fish is also found in dogs, cats, and wild carnivores ; the whipworm occurs in pigs ; the two taenias and the trichina worm are conveyed to man by pork or beef ; and hydatid cyst is the larval stage of a dog tapeworm. All of these, as well as cercarial dermatitis, are of considerable public health interest. Of potential importance in Canada are the lung-flukes and liver-flukes of carnivores, *Dipylidium* (the common urban tapeworm of dogs and cats), and the mange mites. It must be remembered, however, that modern parasitology is still a very young subject, and as it develops many more forms will probably have to be added to this list. Most of these parasitic diseases are easily preventable ; in fact, the evolution of modern civilization and the activities of the sanitarian, the veterinarian, and the cook have already done much to reduce their incidence. Many, however, are still with us, and it is important to know not only where they occur but how frequently they occur, in order that adequate public health measures may be taken. Bacterial diseases are coming more and more under control, and the education of the public has done much to bring this about. Similar steps with regard to the animal parasites should have similar results, and there are signs that such steps would be not inopportune. These are particularly necessary in communities where habitations are widely scattered and sanitary services, so effective in our towns, are still in a rudimentary state.

ANGULAR PREGNANCY: A CLINICAL ENTITY

BY

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It is a common experience in medical practice that specific clinical rarities are seldom encountered singly. A striking illustration of this is furnished by the two cases to be described, which were admitted into our unit of the Glasgow Royal Maternity and Women's Hospital within a period of twenty-four hours. They proved to be examples of that rare variety of gestation designated "angular" pregnancy, which we are inclined to think has never received sufficient recognition as a definite clinical entity.

CASE I

A woman, aged 32, pregnant for the sixth time, was sent into hospital on November 12th, 1933, as a case of ectopic gestation. The fifth pregnancy, in 1929, had ended as an abortion at two months. In each of the first four deliveries, three of which were instrumental and the fourth spontaneous, the noteworthy feature was delay in the third stage. With each pregnancy there was complaint of increasing weakness. Menstrual periods had been irregular as regards both frequency and duration, but the patient was quite definite that the last occurred on July 28th. On the morning of admission there was a sudden gush of watery discharge (suggestive of rupture of the membranes), and acute pain developed in the right side of the abdomen. Pain thereafter was persistent; the patient felt cold and shivery, but she did not have any vaginal bleeding.

On admission she appeared to be extremely ill, being cold, pale, restless, and complaining of severe abdominal pain, mainly right-sided. There was no distension of the abdomen, but a rounded swelling, tender to touch, was present on the right side. The lower part of the abdomen was also tender, and marked Blumbergism was evident. No dullness was detected in the chest, but the respiratory murmur was harsh and accompanied by a few coarse rales. Bimanual examination showed that the cervix was closed, and that the size of the uterus corresponded to the stage of gravidity suggested by the period of amenorrhoea—namely, fifteen weeks; in addition, there appeared to be a cystic swelling to the right of the uterus.

A provisional diagnosis of ectopic pregnancy or ovarian cyst with torsion of the pedicle was made, and, in view of the evidences of peritoneal irritation, immediate laparotomy was performed under general anaesthesia. No blood or free fluid was found in the abdominal cavity. The ovaries were healthy, and the tubes, while somewhat congested, presented no abnormality. The intestines were normal and the appendix innocuous. Examination of the uterus, which contained no fibroids, showed marked elongation of the right cornu, and the diagnosis of angular pregnancy was established. The abdomen was closed.

The following day, November 13th, at 11 a.m., the patient had a rather prolonged rigor, during which the temperature rose to 106°. The sputum, scanty and muco-purulent, was found to contain abundant pneumococci of Type IV. With the subsidence of the rigor, the temperature fell abruptly to normal, and remained so. Incidentally, had serum been administered without typing the organism, the satisfactory result would probably have been ascribed to that agent. Complete abortion occurred on November 14th at 2 a.m., after which the patient felt much better. Subsequent progress was uneventful, and she was dismissed well on December 2nd.

CASE II

A primigravida, aged 21, was admitted to hospital on November 13th, 1933, on account of violent, cramp-like pains in the lower abdomen, especially on the right side. The pregnancy had been uneventful until six days previously, when she had had her first experience of these violent pains. At that time her doctor had noticed that there was tenderness over the uterus, which extended to the right side. He had also noted the hardness of the uterus, and what appeared to be a purulent vaginal discharge, but there was no haemorrhage. With rest and thorough evacuation of the bowels the severe pain passed away, but the cramp-like ones persisted, culminating in the violent right-sided abdominal pain which necessitated removal to hospital. The patient mentioned that, from the onset of pregnancy, she had experienced pain radiating down the posterior aspect of the left thigh, but this did not incapacitate her in any way, and was probably unrelated to the obstetric condition.

She was afebrile on admission, but the pulse rate was increased. Inspection of the abdomen revealed a swelling lying obliquely towards the right side. Palpation confirmed this observation, and demonstrated the marked tenderness, especially over the upper pole, which occupied the right side of the abdomen below the umbilical level. On bimanual examination the elongated and tender right cornu of the uterus was made out, the patient was deemed to be about nineteen weeks pregnant, ectopic pregnancy and other abnormalities were definitely excluded, and angular pregnancy was diagnosed. Repeated examination of the urine for pus cells and organisms yielded negative results. The sedimentation rate of the erythrocytes was normal. Four days after admission the patient was seized with acute right-sided abdominal pain, which caused her to be doubled up. Temporary relief followed a large bowel movement, but the severity of the pain afterwards necessitated the administration of morphine.

The patient was allowed home on November 25th, and was kept under close supervision. Occasional bouts of right-sided abdominal pain occurred, but on the whole she remained fairly comfortable. The uterus continued to occupy its oblique position as the right-sided enlargement became progressively more marked. It was determined that, after the delivery of the child, the uterus should be manually explored in order to localize the placental site. On March 19th, 1934, she was readmitted on account of the recurrence of cramp-like abdominal pains; in addition, she complained of constant generalized pain in the abdomen and lumbar region. She was now thirty-five weeks pregnant; the uterus was lying obliquely, with the upper pole to the right, over which there was exquisite tenderness; and this part of the uterus was so tense as to suggest the presence of the foetal head.

On March 21st, at 7 a.m., the patient complained of severe abdominal pain, which increased in severity until at 10.30 a.m. she was in such agony that morphine had to be administered. The uterus at this time was uniformly tense and tender, but no contractions were observed. Definite labour pains began at 9 p.m. At 12.15 a.m. on March 22nd the cervix was found to be practically fully dilated, and the membranes were artificially ruptured. An hour later a male child, 17 inches long, and weighing 5 lb. 1 oz., was delivered with forceps. After extraction of the child, the uterus continued to lie markedly towards the right side. According to plan a hand was introduced into the uterus; the placenta was found to occupy the elongated right cornu, while the corresponding left cornu at a lower level was quite clear. Bystanders with a hand on the abdomen had no difficulty in appreciating the difference in level of the cornua, and the ease with which the observer's fingers could be felt in the left as contrasted with the right cornu was striking. The placenta measured 9 inches by 4½ inches, and had the shape of a large kidney; there was no evidence of retroplacental haematoma.

The progress of the patient was entirely satisfactory, and she was dismissed well on March 31st. Involution was progressive, but the marked elongation of the uterus to the right side, together with tenderness to the most gentle touch, remained noteworthy features for the first five days of the puerperium.

Remarks by Professor Munro Kerr

Many years ago I directed attention to the subject of angular pregnancy—namely, that particular variety of gestation in which the zygote becomes implanted in the angle or cornu of the uterus. The exact implantation site would appear to be either directly over the tubal opening, or, more probably, in the interstitial portion of the tube immediately external to that opening. The condition is quite distinct from the typical interstitial variety of ectopic pregnancy, for the ovum develops not *in substantia uteri* but towards the uterine cavity. The term "angular" has been employed by several writers in order to distinguish it from "interstitial" pregnancy on the one hand and "cornual" pregnancy on the other, as the latter term is often used to describe a pregnancy in a horn of a uterus bicornis.

In addition to the two cases described, I have seen four which were definitely proved examples of angular pregnancy, and a number not so typical but nevertheless suggestive of this specific abnormality. One of these four cases I described many years ago, but the story bears repetition, and is as follows:

I was asked by a medical friend to see his wife, as he feared she was threatened with an abortion. I had attended the lady at her two previous confinements—one seven and the other four years previously. When I visited her she gave me the history of a period missed. She also told me that ten days after the period was expected abdominal pain and haemorrhagic vaginal discharge appeared. The discharge was not great, but the pain was sometimes severe, and was more marked towards the left iliac fossa. Upon making a vaginal examination I discovered that the uterus was enlarged, and at the left cornu in the neighbourhood of the tube I could detect a small localized bulging. I told her husband of my fear that there might be an extrauterine pregnancy, and that I was chiefly alarmed because it was so close beside the uterus. My fear appeared to be fully justified when, two days later, a cast complete except at one corner was expelled. I thought I would have to open the abdomen at this stage, but my friend requested me to delay doing so. We were, however, prepared for any possible sudden call to operate; the patient was watched very carefully, and all discharges kept. Four days later a small piece of membrane, which just completed the sac that was expelled, came away in the vaginal discharge. Attached to this little piece of decidua was the ovum, which, unfortunately, I lost.

The two cases recorded above and the others I have encountered have all shown similar features: (1) pain; (2) lateral distension of the uterus in the region of the uterine cornu; and (3) tendency to abortion. The pain, as these recorded cases illustrate, may be very severe; indeed, in all the cases I have seen pain has been a pronounced feature. The reason for the pain can only be surmised. Round the tubal ostium there is a very abundant distribution of circular muscle fibres. Again, the blood supply is rich in that region, so that haemorrhages into the uterine wall or beneath the placenta are prone to occur. This is probably the explanation also of the tendency to abortion with this implantation. Of these six definite cases three terminated in abortion.

The outline of the uterine distension is characteristic: an elongated, distended lateral sacculation of the uterus at one cornu. Furthermore, it is very tender to pressure. In the case recapitulated the distension was no greater than the size of a walnut (examined under anaesthesia). In another case—an abortion at four months, which I removed with my fingers—I was afraid that I might perforate the uterine wall. From my experience the condition most commonly first attracts attention, as in the two cases here recorded, between the twelfth and twentieth weeks of pregnancy. It is obvious that the condition very closely simulates ectopic pregnancy, pregnancy in a rudimentary horn, a fibromyoma undergoing degeneration, an ovarian cyst with torsion of the pedicle, appendicitis with lateral flexion of the uterus, or pyelitis complicating pregnancy.

Scattered through obstetric literature are references to angular pregnancy. Paul Bar, Howard Kelly, and I directed attention to it long years ago. Few obstetricians, however, appear to recognize the condition as a specific clinical entity. Modern textbooks, even those of considerable size, make little if any reference to it. For example, the subject is not mentioned in Williams's *Obstetrics*, and is only briefly referred to in the sixth edition of DeLee's textbook. Several examples of cornual and angular pregnancy have been described in foreign journals, but British literature appears to be singularly lacking in such references. The two cases here described and most carefully investigated by myself and my staff cannot be unique experiences. As previously stated, I have already encountered four exactly similar. Many other obstetricians must have dealt with cases of a like nature: we should feel grateful if they would furnish a summary of their observations.

ACUTE EPIDURAL SPINAL ABSCESS

BY

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The epidural space lies between the dura mater and the periosteum lining the bony walls of the vertebral canal. Dandy,[1] writing in 1926, deplores the lack of anatomical description in current textbooks, and discusses the appearances of the space in a cadaver. He attaches great importance to variations in size. Absent over the cervical enlargement, and nearly so over the lumbar swelling, the epidural space becomes deepest where the spinal cord or the mass of its roots is smallest—that is, in the upper dorsal and lower lumbar sections. According to this author the space exists only on the dorsal aspect of the dura, the ventral dura being closely applied to the bones of the vertebrae and their ligaments. The experience of one of us (A. A. McC.) suggests that in the thoracic region of the cord the ventral dura is less firmly adherent than elsewhere.

Pathology

The epidural space is occupied by a loose meshwork of areolar tissue, which, by virtue of a feeble blood supply, offers a favourable site for infection. Epidural spinal abscess, known also as suppurative peripachymeningitis, and by the more generic but less accurate term "external pachymeningitis," is an uncommon but important disease. Many of the recorded cases have been discovered at necropsy, and although there is a record by Traube as long ago as 1871 the condition occupies little or no space in the textbooks.

Dandy classifies the causes into two groups:

1. Extension from a neighbouring focus of infection—namely, boils, or anthrax of the nape of the neck; extrapleural suppuration; osteomyelitis of a rib; osteomyelitis of the vertebrae.
2. Metastatic infection from a distant source.

In a third group no primary focus can be detected. The infectious agent is most often the *Staphylococcus aureus*, though the *Staphylococcus albus* and other organisms may occasionally be found.

Owing to the looseness of the dorsal epidural space the abscess almost invariably lies posterior to the cord, except where it is secondary to disease of the vertebral bodies. For the same reason spread may occur with great rapidity. In a case described by Mixter and Smithwick[2] the abscess extended from the fourth cervical vertebra to the sacrum. These authors emphasize the danger of secondary meningitis in those cases in which a ventral abscess was associated with vertebral osteomyelitis: whilst present in two cases of ventral abscess it was absent in eight cases of dorsal abscess. Insistence is laid on the importance of early recognition and drainage of epidural abscess secondary to infection of vertebrae.

Compression of the spinal cord inevitably follows abscess formation, but the severity of the myelitis is out of all proportion to the amount of compression.

This is well borne out by reports of Hassin,[3] and of Ayer and Viets.[4] When examined at necropsy the cords were not badly compressed, but in section showed marked softening. To explain this finding Hassin suggests that substances from the epidural space may travel along the spinal roots. Allen and Kahn[5] attribute cord softening to interference with blood supply.

Diagnosis

The diagnosis of epidural abscess may offer considerable difficulty. A survey of the literature reveals the fact that in most of the cases the diagnosis was either missed or was made too late for successful surgical intervention.

Dandy found that, of twenty-five collected cases, in only four subjected to operation was a diagnosis even suspected before the necropsy findings, and with the exception of one case there was no evidence to indicate that the nature of the lesion was more than roughly guessed. On the other hand, Bunch and Madden,[6] in a later series of nineteen cases, including two of their own, report operative intervention in sixteen. In some of the reported cases a diagnosis was made of meningitis, in others of myelitis. Allen and Kahn offer as differential diagnosis: poliomyelitis, leptomeningitis, tumour of the cord, and abscess of the cord.

From the clinical aspect pain is the earliest and the most important symptom. It is severe and persistent, and is felt not only in the back, but along the distribution of nerve-roots, irradiating at times to the lower limbs. There is often a latent period, even up to several days, before motor symptoms appear. On the other hand, but rarely, paralysis may occur and reach completeness after some hours. Complaint may be made of stiffness and tenderness in the back and neck, with pain on movement. With the appearance of paralysis there is implication of the sphincters, with difficulty of micturition and defaecation. Disturbance of sensation may appear, and extend upwards. General septic symptoms vary in severity.

Roentgenological examination is not helpful, except in cases in which osteomyelitis of vertebrae has been present for some time. Lumbar puncture may show pus from the epidural abscess, or evidence of compression in the fluid from the subarachnoid space, and these help materially in diagnosis. That it is not an altogether innocuous procedure is shown by records of two cases in which it was followed by septic infection of the meninges. Careful technique should help to minimize, if not to eliminate, the risk. In cases in which neurological findings are inconclusive in regard to localization, recourse should be had to radiography following intracisternal introduction of lipiodol.

The mortality of epidural abscess in the untreated is, as far as published results go, 100 per cent. Of sixty cases collected by us from the literature, operation was performed in thirty. Of these, twenty survived. In many cases recovery was incomplete.

Case Report

The patient, a schoolgirl aged 14 years, previously healthy, complained of vague pain in the back on July 28th, 1933. She appeared rather seedy and listless, but went about as usual. The pain increased steadily until the fifth day, when one of us (G. R. W.) was called in. The pain was described as severe, situated over both sacro-iliac joints, and radiating round the body at the level of the iliac crests. The most striking thing was the child's attitude. She was standing up and was suspending herself from the mother's shoulders. She said that this was the only position which gave relief. There was no limitation of movement, except that flexion of the neck hurt the lower part of the back. There was no tenderness over spine or pelvis. The tongue was furred. Temperature 99° F., pulse 104.

That night she complained of pain in the legs as well as in the back. The pain steadily increased, and was hardly modified by various drugs, including morphine. On the following day pain was persistent, eased somewhat by sitting in a chair. One of us (L. A.), called in consultation, suggested a diagnosis of osteomyelitis or periostitis of the spine. The next day there was complaint of pins and needles, mainly in the left leg. The day after this a second consultation was held. The patient was sitting up, and on getting back to bed for examination complained of a severe spasm of abdominal pain. Simultaneously, the lower abdominal muscles were seen to stiffen. Tendon reflexes were exaggerated in the lower limbs. Constipation was marked. A tentative diagnosis was made of epidural spinal abscess, probably secondary to an osteomyelitis. Arrangements were made for removal to a nursing home for full investigation. On the following morning, nine days after the onset of pain, numbness developed in both legs, with inability to move the right leg. Retention of urine was noted. The patient became very restless and occasionally delirious. Temperature 100.4° F., pulse 130, respirations 32. *X*-ray examination of the spine was negative, and, surgical treatment being considered advisable, one of us (A. A. McC.) was called in.

At this time—the early afternoon of August 5th—the patient complained of agonizing pain in her back and round her body, just below the umbilicus. She looked anxious; breathing was rapid and shallow. Tongue coated; colour good. She had free movement of head and neck, though flexion of the latter produced pain referred to the lumbar region. Abdominal reflexes were absent, with the exception of a slight upper left reflex. Slight tenderness was felt in lower dorsal and lumbar regions, described as "different from higher up." Left leg flaccid; could move great toe, flex ankle, and make an attempt to lift the leg. Plantar stimulation caused withdrawal and marked contraction of the hamstrings; no Babinski's sign. Knee-jerk and ankle-jerk absent. Right leg powerless and flaccid; there was just the slightest movement of the great toe. Stimulation of the sole produced the same response as on the left side. In both legs the sense of position was present. Sensation was normal except over the upper part of Scarpa's triangle on the left side, which was anaesthetic to cotton-wool and to pin-prick. Anal reflex present. Kernig's sign negative. The girdle pain, just below the level of the umbilicus, suggested a localization as high as the tenth dorsal segment of the cord, as did also the presence of an upper abdominal reflex, with absence of the lower reflexes. The anaesthesia in the upper part of Scarpa's triangle suggested involvement of the second lumbar nerve root.

Operation.—Lumbar puncture was done in the recumbent position, with local anaesthesia. When the spine was flexed the patient complained of pain down both legs and all over them; no tension of fluid (30 mm. water); no change on jugular compression; fluid slightly yellow. As we could not place absolute reliance on the patient's localization of the girdle pain, and as the upper abdominal reflex was so slight, lipiodol was injected by suboccipital puncture. Avertin was administered and anaesthesia completed with ether. Radio-

grams, taken by Dr. McDonough, showed that the lipiodol was arrested at the level of the eighth dorsal vertebra. This confirmed the clinical localization, and the laminae of the eighth, ninth, and tenth dorsal vertebrae were therefore removed. Mr. A. Chance assisted. As soon as the ligamentum subflava was opened a gush of thick pus welled up, chiefly from the left side. When the dura pulsated freely the wound was drained, and partially closed. A posterior plaster case was applied. A pure culture of *Staphylococcus aureus* was grown from the pus, and a vaccine prepared.

Subsequent History.—On the day following the operation there was complete flaccid paraplegia, with total absence of response to all forms of stimulation. Sensation was unimpaired except over Scarpa's triangle on the left side. On the next day voluntary movement of the left great toe returned; stimulation of the sole produced slight movements of the toes. Painful flexor spasms occurred, chiefly in the left leg, and recurred periodically for seventeen days. Eleven days after the operation good movement was noted in the left leg at all joints. Knee-jerk and ankle-jerk present; slight ankle-clonus. Normal plantar response. No movement in right leg except slight movement of great toe. Knee-jerk and ankle-jerk exaggerated; ankle-clonus. No plantar response. Light touch present over both limbs. Sense of position of toes accurate in left foot, usually accurate in right foot. Sixteen days after the operation voluntary movement appeared in right leg, and improved from day to day, though there was no power yet to flex the hip or knee. Left leg movements were fairly good, but the patient made no attempt to move either leg unless told to do so. The temperature, which had oscillated at first between 100° and 103° F., gradually subsided in the third week, and the pulse rate, at first 120 to 130, descended to normal. The bladder condition remained unchanged. The wound looked clean, but discharged freely. The general condition improved, and toxic symptoms disappeared.

On September 3rd the patient began to pass urine at will. On October 1st the power of walking began to return. The gait was spastic. A month later she was able to walk about a quarter of a mile; gait slightly spastic; tendon-jerks slightly increased; transitory ankle-clonus. Shortly after this slight girdle pain returned at the level of the lower chest, disappearing in the erect position. This passed off following the extrusion of a spicule of bone from the sinus. Further progress was uneventful, and at the end of April, 1934, the patient is normal in every way.

Summary

We present a case of epidural spinal abscess in which recovery followed a surgical operation. The interesting features of the case were as follows:

1. The intensity of the pain, which at its height defied all drugs, including morphine.
2. The radiation of pain round the trunk.
3. The relief afforded by the adoption of an attitude which relaxed the spine.
4. The evidence of anterior root irritation, as shown by sudden stiffening of abdominal muscles.
5. The almost complete absence of anaesthesia.
6. The latent period of eight to nine days which preceded paralysis.
7. The fact that adequate drainage was secured by the removal of three laminae. Operations on a much more extensive scale are described in the literature.

Our experience with this case suggests that removal of a large number of laminae is unnecessary. This is of obvious importance in regard to operative risk.

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TETANUS IN TOY-PISTOL WOUNDS

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The prophylactic use of antitetanic serum has proved so useful in cases where infection is suspected that the following case, illustrating a rare mode of infection, is worthy of notice so that early treatment on prophylactic lines can be instituted and a probable catastrophe prevented.

Case Record

An otherwise healthy boy of 8 was admitted to the Glasgow Royal Infirmary on December 9th, 1933, suffering from tetanus. The following history was obtained.

On December 2nd, 1933, he was playing with a toy pistol and some blank cartridges, for which he had exchanged a magic lantern with another boy. The pistol went off unexpectedly, and he sustained a wound of his left index finger, for which he was treated at home by his mother. On December 9th, seven days later, he developed stiffness of his jaws, and the family doctor was called in. He diagnosed tetanus, and sent him into the Royal Infirmary at once.

On admission there was well-marked trismus, associated with tenseness of the neck and back. There was also slight head retraction. He could open his mouth half an inch. He had slight convulsions, associated with some degree of opisthotonos. The left index finger was seen to have a septic wound at the base.

The boy was put into a side room with the blinds drawn and antitetanic serum administered at once. His condition gradually became worse, and on the third day the left index finger was amputated. He died quite suddenly the following day.

Serum Treatment.—On admission he was given 40,000 units of antitetanic serum intramuscularly and 20,000 units intrathecally. Next day he was given 120,000 units intramuscularly and 80,000 units intrathecally. On December 11th he had 10,000 units intramuscularly, and on the 12th 12,000 units intramuscularly and 40,000 units intrathecally. On the 13th he was given 80,000 units intrathecally.

The cerebro-spinal fluid showed nothing on culture or smear. No cultures were taken from the wound on the finger either before or after amputation.

In an endeavour to discover the source of infection I obtained from the procurator-fiscal one of the two remaining cartridges. The police were unable to trace where the cartridges were bought. However, I managed to buy some of a similar make in a shop. The original cartridge and some of the bought ones I gave to Dr. Robert Cruickshank, bacteriologist to the Glasgow Royal Infirmary. Others I sent to Dr. Clark Trotter, medical officer of health for Islington, at his own request, and he had them examined by Professor James McIntosh, director of the Bland-Sutton Institute, Middlesex Hospital. Professor McIntosh reports as follows:

"The wads were made of a rough type of paper. The cultures grew staphylococci, streptococci, coliform bacilli, and diphtheroid bacilli. No *Bacilli tetani* grew."

Dr. Cruickshank reports as follows:

"None of the bullets examined bacteriologically gave a growth of *B. tetani* either by cultural methods or by pathogenicity tests, nor were there organisms of an associated nature, such as *B. sporogenes*, which would have suggested the possible presence of *B. tetani*. The organisms recovered were aerobic and spore-bearing bacteria such as might be found in dust and in the atmosphere. On physical examination of the cartridges there was no evidence of any material—for example, horse-hair felt—likely to harbour *B. tetani*."

Tetanus infection from blank cartridge wounds has not received much attention in this country, although it has been known for some time in the United States, where

it was common following the celebrations of Independence Day on July 4th. In America,[1] in 1903, despite official warnings, over 400 patients died from tetanus due to this cause alone. The incubation period was short and the disease very virulent. In the majority of cases the wounds were in the hands. Recommendations were made regarding the sale of toy pistols and blank cartridges and the giving of antitetanic serum in all wounds of this nature. This reduced the mortality to three in the 1914 Independence Day celebrations.

Miss Smith[2] reported four cases with three deaths, occurring in London in 1932. The wadding of the blank cartridges was examined for *B. tetani*, but none were found. However, other anaerobes were isolated, particularly *B. sporogenes*. She points out that this does not exclude *B. tetani*, as it is difficult to isolate *B. tetani* from mixed company. In America, following the 1903 cases, a large number of blank cartridges were examined, but in no case was *B. tetani* found, although one culture, inoculated into rats, caused death from convulsions. Other instances of death from tetanus associated with toy-pistol wounds were reported by Stokes,[3] Schofield,[4] and Clark Trotter.[5,6] In Dr. Clark Trotter's case the cartridges were examined by Professor McIntosh, and *B. tetani* was found. It was observed then that only in those cartridges with a wad containing hair felt was the organism obtained. Dr. Clark Trotter remarks that thorough sterilization, before being used as a wad, is the only certain way of preventing these accidents.

There is, of course, no direct evidence that the tetanus infection in this case was derived from the cartridge, but the frequency of tetanus after wounds due to the use of toy pistols and blank cartridges suggests that either the infecting organisms were already present in the cartridge or that the type of wound, associated with mild sepsis, may predispose to tetanus infection. The rarity of tetanus seen at the out-patient department of a large hospital, such as the Glasgow Royal Infirmary, which deals with a very large number of street accidents, would suggest that either of these two reasons is correct. It is important that the general public and the medical profession should be aware of this possible danger from toy-pistol wounds, so that early treatment can be given, as, once the disease is established, the prognosis is well-nigh hopeless.

I am indebted to Mr. Dunbar of the Glasgow Royal Infirmary for allowing me to publish this case, and to Professor McIntosh and Dr. Cruickshank for the bacteriological examinations, and also to Dr. Clark Trotter for sending me a copy of his annual report.

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THE TREATMENT OF PNEUMOCOCCAL EMPYEMA WITH BILE SALTS

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The lysis of pneumococci by bile was noted by Neufeld[1] over thirty years ago, and Levy[2] in 1907 proposed its use as a differential test between pneumococci and streptococci of the *viridans* group. Many workers have sought for a chemotherapeutic agent in the treatment of pneumococcal infections—notably Lamar,[3] Morgenroth and Levy,[4] and Felton.[5] Cocchi[6] in Italy and Thomson[7] in this country have described the treatment of pneumococcal empyema by aspiration of the pus followed by the injection of a solution of sodium taurocholate. This method appeared to offer so many advantages that we decided to try it, and in our first cases we used the 20 per cent. solution of sodium taurocholate recommended by Cocchi.

It has been customary for some years in this laboratory to add 0.1 c.cm. of a 10 per cent. solution of sodium desoxycholate to 5 c.cm. of broth culture (brought to *p*H 7.8) as a test for pneumococci. Lysis should occur within five minutes. This modification of the classical test was made following the suggestion of Mair,[8] and laboratory experience of the varying potency of individual samples of commercial sodium taurocholate. In addition, there is the advantage of using a substance which is chemically pure. We accordingly decided to try this salt clinically.

Before doing this we made *in vitro* experiments to compare the lytic potency of the sodium taurocholate in use with that of sodium desoxycholate. A thirty-hour broth culture of the strain of Type I pneumococci, recovered from one of the cases undergoing treatment, was used. Before adding the substances under test the broth reaction was adjusted to *p*H 7.8. It was found that whereas 0.2 gram of sodium taurocholate (1 c.cm. of a 20 per cent. solution) was required to produce lysis in 5 c.cm. of the broth culture, 0.0125 gram (0.25 c.cm. of a 5 per cent. solution) of sodium desoxycholate achieved the same result—that is, the sodium desoxycholate is sixteen times more potent.

We endeavoured to assess the toxicity of the desoxycholate by animal experiment. Three 250-gram guinea-pigs were taken. The first received 1 c.cm. of a 10 per cent. solution intraperitoneally, and death occurred in twelve hours. The post-mortem revealed intestinal necrosis with haemolysis. The second received 1 c.cm. of a 2.5 per cent. solution intraperitoneally with no observable ill effect, while the third received 1 c.cm. of a 10 per cent. solution intramuscularly into the thigh and survived. We realized also that absorption might produce severe haemolysis, for *in vitro* experiments showed that it is over a hundred times more haemolytic for washed sheep's red corpuscles (fragility 0.65–0.5) than sodium taurocholate. For these reasons we have not injected sodium desoxycholate into an empyema until the presence of frank pus shows that a definite abscess cavity has formed.

Method of Use and Results

The technique of the treatment of empyemata by the injection method is simple. The presence of pneumococci in the pus must first be confirmed, since it is only on these organisms that lysis takes place. The abscess cavity is then aspirated again, and as much pus as possible drawn off. With the needle still in position the solution of sodium desoxycholate is injected, and we have used from 5 to 20 c.cm. of a 5 per cent. solution of the salt.

The best results seem to be obtained by repeating the aspiration and injection daily, or every other day, in the early stages, but the length of time that can be

allowed to elapse can be gauged by the general condition of the patient, the amount of pus withdrawn, and the results of microscopical examination and culture of the pus. We have found radiograms of the chest of considerable assistance in estimating the quantity of fluid present. It is essential that strict surgical asepsis must be maintained, as it is very easy to introduce secondary organisms where frequent aspiration is being undertaken, and if this occurs it will, of course, necessitate the institution of continuous drainage. The use of a trocar and cannula has been advocated for puncture of the chest wall[7] in order to prevent the carriage of a punched-out portion of skin by an exploring needle, but we have not found this necessary. In a favourable case the temperature rapidly falls, the general condition of the patient improves, and the pus becomes thinner. In some cases the salt tends to jellify, particularly where relatively large quantities of the solution are injected into a small quantity of pus, but we have not found that this has interfered materially with aspiration.

Cocchi has suggested that the bile salts, besides causing lysis of the organisms, may have some action in producing liquefaction of the fibrin, which is usually formed in such large amounts in the pleural cavity. Certainly we have never found the needle to block during the aspiration, and at the end of treatment the clinical signs and clearness of the chest to *x* rays indicate a small degree of pleural thickening. The latter is, however, probably due partly to the avoidance of secondary infection and the absence of irritation caused by a drainage tube. Examination of the pus during the course of treatment showed characteristic changes. At the commencement microscopy revealed 95 per cent. polymorphonuclear pus, with the field crowded with diplococci. The first change noted was a marked reduction in the number of organisms and disintegration of the cellular constituents. Finally, the aspirated material consisted of amorphous debris with no intact organisms, but revealing occasional swollen cocci on prolonged search. Under these circumstances cultures were negative.

Although we have only had the opportunity of employing sodium desoxycholate in two cases it seems to offer both practical and theoretical advantages over sodium taurocholate, and in view of this we feel justified in bringing it forward in the hope that it may be subjected to a more extended clinical trial than we are able to give.

Case Records

Case 1.—M. E., aged 4½. Admitted January 9th, 1934, with signs of a left-sided empyema following pneumonia. Temperature 101–102° F., pulse 130–146. Chest aspirated, and 80 c.cm. of purulent fluid withdrawn. Culture showed pneumococci Type I. On January 12th 45 c.cm. of thick pus removed; 5 c.cm. of 20 per cent. sodium taurocholate injected. Aspiration and injection repeated daily, and by the 17th the temperature was normal, pulse 80-100, and the pus thin and sterile on culture. The frequency of aspiration was reduced. On February 2nd 200 c.cm. was withdrawn, and culture showed numerous pneumococci. Two days later, although the general condition remained satisfactory, the temperature began to rise, and ranged from 99° to 100° in the evenings, and the pulse varied between 100 and 120. It was about this time that we started a fresh batch of taurocholate, but the exact date is uncertain. This taurocholate was tested against cultures of the organism, and gave apparently satisfactory results. The boy continued to have an evening rise of temperature, and rather rapid pulse throughout the month of February, but his general condition remained surprisingly good. The pus withdrawn was rather thicker again, and pneumococci were usually grown on culture. On March 3rd we decided to try injections of sodium desoxycholate, and he was given 10 c.cm. of a 5 per cent. solution. The temperature was normal on the evening of the 5th (two days later), and did not again rise above the line. The pulse rate fell, to reach normal a few days later. The amount of fluid on aspiration rapidly decreased, and was sterile on culture. Treatment was stopped on March 15th, but a week later a few cubic centimetres of serous fluid were withdrawn. He was discharged on March 17th, and a radiogram at this time showed a practically clear left base. He was seen after a month's interval, and had remained perfectly fit.

Case 2.—H. T., aged 15. Admitted March 18th, 1934, three weeks after the onset of pneumonia, with signs of right-sided empyema. Very cyanosed and toxic. Temperature ranging between 101° and 103° and pulse 120–130. On aspiration 23 oz. of pus were removed. Culture showed pure growth of pneumococci Type I. On March 19th 12 oz. of pus were removed and 10 c.cm. of sodium desoxycholate injected. The aspiration and injection was repeated every second day, and although the amount of pus withdrawn fell in about a week to 50–60 c.cm., he had all the signs of a solid right lung, and the temperature persisted between 99° and 100°. There had been complete absence of sputum during the course of the pneumonia, but he now began to bring up fairly large quantities of thick, muco-purulent sputum, which contained abundant pneumococci. We decided the condition was one of unresolved pneumonia, and that the pleural cavity was being continually reinfected from the underlying lung. In view of this, and as his general condition was much improved, we attempted to keep the empyema under control by repeating the aspiration and injection every few days, and the amount of pus drawn off varied from 10 to 60 c.cm. Although the direct smear showed a greatly reduced number of organisms the culture remained positive. He was given the usual medical treatment, and the signs in the right lung cleared very slowly. Coincident with this the sputum decreased and the temperature returned to normal. By April 26th the right lung seemed sufficiently normal to suggest that the empyema might remain sterile. The cavity was aspirated, and 15 c.cm. of 5 per cent. desoxycholate injected daily for four days. The temperature remained normal, and the cultures became sterile. On the last aspiration, on the 29th, only a few cubic centimetres of fluid were withdrawn.

In view of the fact that simple aspiration alone will sometimes cure a pneumococcal empyema in children it seems worth while to record the case of an adult treated by aspiration and injection of bile salts.

Case 3.—A. P., aged 21. Admitted January 15th, 1934, with signs of left-sided empyema following pneumonia. General condition very poor. Temperature 101°, pulse 120. On aspiration 200 c.cm. of straw-coloured fluid was removed. Abundant organisms seen on smears. Culture: pneumococci Type I. January 20th: On aspiration 350 c.cm. of pus was obtained, and 10 c.cm. of 20 per cent. sodium taurocholate injected. January 22nd: jelly-like pus was aspirated (30 c.cm.), and 10 c.cm. of taurocholate injected. The temperature was now normal, and smears of the pus showed no organisms, although a few pneumococci were grown. January 23rd: brownish fluid was aspirated (250 c.cm.), and 10 c.cm. of taurocholate injected. Temperature normal and cultures sterile. January 25th: 100 c.cm. of blood-stained fluid was withdrawn. No injection was given. Cultures of this fluid were sterile. The patient was aspirated on two subsequent occasions, and a small quantity of sterile fluid was withdrawn. Radiograms at this time showed "unexpanded lung left base." He was discharged on February 11th, and seen again four weeks later, when he was quite well, and a radiogram showed the left lung practically clear.

We wish to thank Dr. John Menton, county bacteriologist, for his advice and assistance.

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Clinical Memoranda

VOLVULUS OF THE CAECUM COMPLICATING LABOUR

This case is interesting owing to its rarity and the difficulties to which it gave rise in diagnosis.

A primipara, aged 23, about thirty-eight weeks pregnant, and with slight pelvic contraction, was admitted to the Mothers' Hospital, Clapton, at 11 p.m. on November 14th, 1933, suffering from abdominal pains, which she thought were the beginning of labour. The pain was most marked under the right costal margin, and was sometimes colicky in nature and sometimes continuous. Uterine contractions could be felt, and she was thought to be in labour. The note "pains good" appears on her chart for that night.

Owing to the unusual nature of the pain she was seen next morning by the senior honorary obstetric surgeon, who did not consider there was any immediate indication for interfering with the course of labour, but advised that she should be carefully watched. The condition remained more or less the same until the following morning, but the abdomen was noticed to be getting more distended. Vomiting was present, but not to a greater extent than may occur during uncomplicated labour, and the vomited material was a clear fluid. The bowels did not act, and there was no result to an enema.

I saw the patient for the first time at 1 p.m. on November 16th, and I thought then that her condition suggested a pulmonary lesion, or possibly an obscure toxaemia, rather than an acute abdomen. She had been dyspnoeic since the early morning, and looked drowsy and somewhat cyanosed. Her temperature was 100°, her pulse 120, and her respirations 28. She resented abdominal examination, but there was no obvious resistance, and there was a conspicuous lack of tenderness on pelvic examination. The head was high and the cervix undilated. The patient was seen at 5 p.m. by the consulting physician, who considered the signs in the chest were due to collapse of the lung from increased intra-abdominal pressure rather than to a primary pulmonary lesion, and advised laparotomy. It was also felt that a Caesarean section would be the safest method of delivery in view of the patient's condition.

I operated at 9 p.m., there having been no result to further enemata. A little turbid fluid escaped on opening the abdomen, but it was impossible to trace its origin until the uterus had been emptied by Caesarean section. With the hope of lessening the risk of infection here, the uterus was eventrated and painted with violet-green before being incised, and was swabbed out with it before being sutured. A volvulus of the caecum was found, the caecum being enormously distended. Its walls were deep purple in parts, and showed areas of superficial necrosis where the peritoneal coat had split. A Meckel's diverticulum was present, looking like a tightly blown-up finger of a rubber glove. The volvulus was untwisted without difficulty, and any doubtful areas of the caecum were oversewn. The abdomen was closed without drainage, a caecostomy being performed.

The patient made very satisfactory progress for the first five or six days, although she had a rapid pulse. After this, however, her temperature became irregular, and finally she developed a cystic swelling on the left side of the abdomen. On December 8th I operated again, and drained a large pelvic abscess, well shut off by adhesions, the pus lying partly in front of and partly behind the uterus. The left tube and ovary were more or less disintegrated, the greater part of the tube having sloughed off the uterus. The right tube and ovary were inflamed but seemed recoverable, and were left *in situ*. The patient ultimately did well, and was discharged cured with a healthy baby on February 2nd, 1934. The caecostomy wound had still not healed, owing to the development of a large polypus, which I shall remove later if necessary. Her convalescence was delayed by a *B. coli* infection of the urinary tract, and also by the original wound breaking down.

Since sending in the above report I have had the patient back in hospital to excise and close the colostomy wound. The polyp proved to be a polypoid diverticulum of the right Fallopian tube (confirmed by microscopical examination). The fimbriated end of the tube was closed. The ovary had regained its normal appearance. I removed the polyp and did a salpingostomy, and an inflation test three weeks later showed that the opening had remained patent.

This case illustrates the difficulty that may be met in diagnosing an acute abdominal condition when it occurs during labour (it is well known that the symptoms of acute appendicitis occurring then may be almost completely masked), and it bears out the maxim that where there is any reason to suspect such a condition then, or during pregnancy or the puerperium, it is much safer to do a laparotomy, even should the operation prove to be unnecessary. By far the most striking symptom in this case was the intense dyspnoea, which finally became so marked that the patient could hardly bear to be moved.

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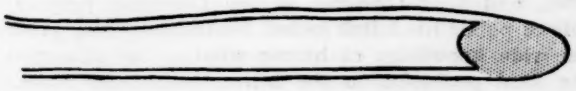
CARCINOMA OF THE APPENDIX

This case is published as a plea for the routine examination of every appendix removed, whether it looks diseased or not.

A single woman of 35 years, well nourished, was admitted on account of abdominal pain and vomiting; the temperature and pulse were normal, the abdomen resistant in the right iliac fossa but not rigid; there was a history of chronic constipation.

A laparotomy was performed and the abdominal viscera examined and found to be normal; a perfectly normal-looking appendix was removed. After operation the appendix was slit up along the lumen, and this was possible except for the last quarter of an inch at the tip; the section was completed from the outside.



The above diagram shows the appendix in sagittal section; the growth at the distal end did not interfere with the contour of the appendix, and felt rather like a faecolith; on cutting, there was a gritty sensation on contact with the scalpel. The patient made an uninterrupted recovery.

The microscopical report was as follows: "The section shows a carcinoma which is infiltrating the muscle and submucous coats of the appendix. There is some alveolar formation, but no lumina can be seen. In other places the cells are arranged in large masses. Most of the cells are tending to a columnar type, and are producing globules of mucus. This growth probably arose from appendicular mucous membrane, and does not appear to be very malignant."

Two months later the patient again presented herself, complaining of constipation, swelling of the abdomen, and vomiting, rather suggestive of obstruction. Immediate laparotomy was carried out; it was found that a knuckle of small intestine had gone into a retroperitoneal fossa behind the caecum. This was released, and she made a good recovery. At this operation a careful survey of the abdominal cavity was made; there were no enlarged glands, and no secondaries in the liver or on the peritoneum. She has been seen at intervals during the past six months, and apart from her habitual constipation remains well; her abdomen is flat and soft.

The point debated in regard to after-treatment was: should the patient have a course of deep *x*-ray therapy? This was decided against, chiefly because the patient might become aware of the nature of her complaint and give it an undue significance, and because of the good prognosis in similar cases.

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Hillingdon, Uxbridge.

Reviews

FASCICULUS CESTRIENSIS

From time to time, outside the ranks of consulting practitioners, there arise in this country men who by their intrinsic merit and character become in the course of years masters of medicine to their colleagues, and stand in the position of father in a professional sense to the doctors of a wide area. In the publication of *Fasciculus Cestriensis*[1] the doctors of the county of Cheshire, through the Panel Committee, seek to pay tribute to such a man in the person of Sir William Hodgson, who having just celebrated his eightieth birthday still presides as chairman over the Panel Committee and County Council of Cheshire.

In its manner and content this book adopts a new and original method. The first portion is concerned with a biographical sketch of Sir William Hodgson's public and professional life. After a childhood of by no means uneventful changes, we follow his student career at St. Thomas's Hospital, and Glasgow, Edinburgh, and Dublin, under the influence of men such as Barnes and Lister, to the field of general practice, which to him seemed to open the widest door to the many-sided interests of his knowledge and abilities. Soon after starting practice in Crewe we find him deeply immersed in local political and industrial problems. These controversies gave early proof of his powers as an organizer and fighter, and introduced a new force and spirit both in the council chamber and in the big industrial organizations of the district.

The establishment of county councils in 1889 and his election as member for Crewe widened his sphere of usefulness in public affairs and opened fresh fields for the forceful pursuit of his ideals. Mayor of Crewe in 1892, and later chairman of the Licensing Justices, no side of public life failed to feel his influence and profit by his wide knowledge of human affairs. As champion of the local profession in the bitter controversy associated with the establishment of national health insurance he set the seal on his popularity with the doctors of the county. In recognition of his long and arduous public services he was knighted in 1920, and seven years later the Freedom of Crewe was conferred upon him on the occasion of the jubilee of the incorporation of the borough.

Such is a brief sketch of the biography here set out, which must leave two impressions in particular on the minds of those who read the full narrative. First, the wonder that one man, none too robust in health, should find time to accomplish so much in a lifetime. To establish and maintain a large practice, to take part in sport and recreation in addition to this large share in public life, might well seem impossible to most men. Here is a lesson in the value of time, and one more example of the truth of the saying that it is the busy man who has time to do things. The other impression is a reminder that in all the complicated organization of public affairs, with its committees, councils, and the like, we must look to the individual to supply the driving force. However big the machine the man with certain qualities will never fail to make his influence felt.

It is in the second portion of this book that a new feature is presented. There is added a sheaf of clinical memoranda compiled by fifty and more Cheshire doctors. These are intended to provide a record of the state of medicine in the county at the present time, a state which Sir William has done so much to foster. The monographs vary in length and quality from a full article on a given subject based on specialist study to the merest clinical note, and all are readable.

The whole book is a striking local tribute to an outstanding member of the profession. It will claim attention outside the county of Cheshire, and we congratulate those responsible for its production.

[1] *Fasciculus Cestriensis in Honour of Sir William Hodgson.* Issued on the occasion of his eightieth birthday, May 13th, 1934. Copies will be on sale at 15s.

ABDOMINAL DIAGNOSIS

Les Diagnostics Chirurgicaux au Lit du Malade,[2] by M. BARTHÉLEMY, deals entirely with problems of abdominal diagnosis, discussing them purely from a practical standpoint. It is intended for advanced students, and especially for those who are already engaged in practice. It is illustrated by descriptions of cases which have occurred in the author's practice, and, indeed, it closely resembles the running commentary which a surgeon is accustomed to give when taking his students round the hospital wards. It commences with a discussion on abdominal wounds and injuries, followed by some considerations regarding hernia. The complications of gastric ulcer, haemorrhage, perforation, and subphrenic abscess are discussed in very brief terms, and a few more pages are given to stenosis of the pylorus. Affections of the biliary passages and the pancreas are discussed at somewhat greater length, as are also the clinical forms of appendicitis. Chapters following on cancer of the colon and affections of the rectum complete the first part of the work. The whole of the second part is devoted to gynaecology, so that this subject is dealt with in far greater detail than is general surgery. The fact that nearly a quarter of the text is devoted to affections of the uterus indicates very clearly the predilection of the author.

An attractive feature of the book is the series of rough sketches by which it is illustrated. Although very rough, and in some cases even crude, they indicate most clearly the intention of the author, and are probably of greater practical value than more carefully executed drawings. We can imagine that the book will be of real value to many surgeons who are working on their own away from the larger centres, and especially to those who have to deal with the more pressing emergencies of gynaecology.

[2] *Les Diagnostics Chirurgicaux au Lit du Malade.* Par M. Barthélemy. Paris: N. Maloine. 1933. (Pp. 306; 101 figures. 45 fr.)

SEX TEACHING

A small book by THEODORE F. TUCKER and MURIEL POUT, entitled *Awkward Questions of Childhood*,[3] will be found a help to many parents and teachers. The experience of the authors, as evidenced by this and a previous book on *Sex Education in Schools*, has mainly been with elementary school children; and this experience, together with a considerable period of experimental talks and teaching, entitles what they say to be received with respect and to be regarded as having some authority, as founded upon a practical basis and designed to meet real requirements. The book consists of an introductory chapter on "Some Principles of Sex Education," a number of answers to specific questions which are commonly asked by children of various ages, and two supplementary chapters dealing respectively with the subjects of masturbation and adolescent friendships. Each of the answers suggested in the main portion of the book is followed by a section giving to parents and teachers some reasons for the answers recommended, together with additional information

[3] *Awkward Questions of Childhood. A Practical Handbook on Sex Education for Parents and Teachers.* By Theodore F. Tucker and Muriel Pout, B.Sc. London: Gerald Howe, Ltd. 1934. (Pp. 162. 3s. 6d. net.)

relevant thereto, such as may enable them to appreciate more fully the nature of those answers, and perhaps help them also to meet any supplementary questions. It is recognized, of course, that not every question will be asked by every child ; indeed, it is probable that some of them are asked by very few children. The authors, however, give a place not only to the universal " Where do babies come from? " but to the occasional " What is birth control? " or " What are venereal diseases? " The answers set out are for the most part wise and sufficient. Parents and teachers will be advantaged, not necessarily by adopting them, but at least by considering them. There is some tendency to prolixity and undue repetition, especially in the introductory chapter and in a few of the sections for those who give the answers. And it may be doubted whether there is any great value in the two answers which introduce to the boy or girl the mention of chromosomes. This can scarcely be effective except in the course of some regular instruction in general biology. So also doubt may be expressed as to the wisdom of the suggestion that the unwanted child should always be avoided, and of the statement or implication that deaf-mutism is always directly inherited. Of the general value of the book, however, there can be no doubt ; and its emphasis on the importance of positive teaching and frank answering, as contrasted with avoidance, prohibition, and negation, is fundamental.

THE LAW OF INDUSTRIAL DISEASES

Doctors and lawyers concerned with administering the Workmen's Compensation Acts have to face a difficult task in applying the numerous sections, schedules, appendices, regulations, and decisions which contain the law relating to industrial diseases. Several good textbooks have been written on the Act itself, but many practitioners—in particular, medical referees and certifying surgeons—need a fuller explanation of this particular aspect. Mr. C. H. SPAFFORD has taken Sections 43 and 44 and written a very clear and concise commentary[4] on them, and has considered the effect of the most recent decisions by the Court of Appeal and the House of Lords. He devotes a chapter to the certificate of disablement, its contents, the conditions under which it is conclusive, and the remedies available when it is defective. The appeal to the medical referee is fully discussed, and legal readers will find the chapters on determining the employer who is primarily liable, and the joinder of previous employers, of great practical value. As a book of reference the volume has considerable advantages over the existing textbooks because of its clarity and orderly arrangement. The only criticism that can fairly be made is in respect of the price, which seems very high for a small octavo volume.

A SHORT HISTORY OF MEDICAL SCIENCE

Dr. G. B. GRUBER, professor of pathology in the University of Göttingen, has published, under the title " An Introduction to the Spirit and Study of Medicine,"[5] an interesting course of lectures delivered to students commencing their medical education. They comprise a short explanation of the manner in which medicine advanced to its present position.

The first lecture gives a general review of the development of biological science up to the time of Galen. The succeeding fifteen hundred years are barely noted, and the second lecture deals with Vesalius—his work and its consequences. Subsequent lectures deal in turn with the development of the medical sciences. Thus the history of the fundamental sciences of histology, physiology, psychology, and genetics is treated first, to be followed by an account of such applied sciences as pathology, bacteriology, pharmacology, and hygiene. The final papers are devoted to a consideration of the relations between the medical profession and the rest of society. The subjects discussed under the last heading include the cloud of cults and quack systems which compete with modern medical science by pandering to primitive superstitions ; the medico-legal obligations of doctors ; and matters bearing upon medical ethics.

The volume is a small one of about 250 pages, but within this compass the author provides a very readable survey of the wide range of topics upon which he touches. The general conception and purpose of the work seem excellent. The evolution of modern medicine, and in particular its spectacular growth during the past century, is not only a study of great general interest, but also one with which all medical students ought to have an acquaintance. From time to time we hear a complaint that medical history is tending to lose its way in masses of personal detail about the careers and discoveries of great men. However that may be, there is ample room for general surveys such as Dr. Gruber gives here, providing a picture of the development of scientific ideas.

THE PATIENT'S CONSTITUTION

The medical practitioner is continually confronted with the problem of bodily constitution in the treatment of his patients, and he gets very little help in this matter from medical textbooks. The subject is treated inadequately, for the sufficient reason that the factors which determine individual constitution are extremely complex, and have only in recent years received satisfactory analysis. A very useful book has been issued by Professor NAEGELI under the title of " The General Doctrine of the Constitution,"[6] providing a lucid account of what is known on the subject at the present time, with special reference to its bearing on medicine. It is deserving of careful study by medical practitioners. The problem of constitutional differences is one of " variability," and as the latter has been elucidated almost exclusively in the sciences of botany and zoology the medical man needs to revive his interest somewhat in those subjects in order to understand the doctrine. The author has for some years endeavoured in his lectures to merge medical science in the larger conception of natural history, and the present work is written apparently with a similar intent.

After discussing the definition of " constitution," the author enters in detail into the kinds and causes of variability, giving examples in botany, zoology, and man. Then follow special articles on hybridization, germinal induction, the hereditary transmission of acquired characters, race and constitution, and the influence of sex and age. The final chapters deal with the constitution and special diseases—namely, tuberculosis, pernicious anaemia, haemophilia, chlorosis, and the psychoneuroses. Apart from its bearing on medicine, the work will appeal strongly to all who are concerned with such subjects as evolution, palaeontology, and racial differences ; and to the general reader from its inherent interest. Probably there is no other book in which the subject is so fully and clearly explained.

[4] *The Legal Aspect of Industrial Disease.* By C. H. Spafford, Barrister-at-Law. London: Butterworth and Co. (Publishers), Ltd. (Pp. 263. 21s. net.)

[5] *Einführung im Geist und Studium der Medizin.* Von Prof. Dr. G. B. Gruber. Leipzig: G. Thieme. 1934. (Pp. xxvii + 244. Kart., M.4.80 ; geb., M.5.70.)

[6] *Allgemeine Konstitutionslehre in Naturwissenschaftlicher und Medizinischer Betrachtung.* Von O. Naegeli. Berlin: J. Springer. 1934. (Pp. 189 ; 32 figures. RM.15 ; geb., RM.16.20.)

Notes on Books

The tenth edition of the late Professor CUSHNY's *Textbook of Pharmacology and Therapeutics*[7] has been prepared by Professors C. W. EDMUNDS and J. A. GUNN. These authors undertook the difficult task of continuing the textbook eight years ago, and were responsible for the ninth edition, which appeared in 1928. Their general aim has been to preserve not merely the critical spirit of the book, but also the text as far as this is possible. Recent advances in pharmacology have, however, necessitated the rewriting of many sections, such, for example, as those on iron, bismuth, liver extract, and the barbiturates. In general, the whole volume has been carefully revised and brought up to date, but its size has only been increased by forty pages. The editors are to be congratulated on the skill and care they have expended in bringing the textbook up to date whilst preserving its characteristic form.

Individual Psychology and Practice[8] includes four contributions written by clinicians associated with the Adlerian movement. Dr. C. M. Bevan discusses the relationship between medicine and psychology, stressing especially the desirability of attempting some degree of integration between the various schools of dynamic psychology with a view to forming a liaison society between official medicine and general psychological thought. Dr. H. O. Woodcock writes on "The Tyranny of the Invalid"; Dr. F. A. Leighton on "The Purpose and Some Neuroses"; and Dr. F. Marjory Edwards discusses "The Psychological Approach to Gynaecological Problems." These clinical studies usefully exemplify the therapeutic aims and methods of the Adlerian school.

To one of the many series of short monographs now appearing in France, this one being entitled "New Therapeutics," Dr. F. RATHERY has contributed a modest booklet of fifty pages on "The Treatment of Juvenile Albuminuria."[9] This subject requires a discussion of the causation of albumin in the urine, and leads to a diversity of methods, involving diet, hydrotherapy, and drugs, according to the many different diseases of which this condition is a symptom. The best sections are those on the treatment of albuminuria due to acute nephritis, and on orthostatic albuminuria, which opens with the wise remark, "In reality orthostatism favours the accentuation of all albuminuria.

Metabolism Problems[10] is a small volume in which are printed a series of addresses given at the opening of the Summer University at Santander, by Professor S. J. THANNHAUSER of Freiburg. He deals with the following subjects: purine metabolism, the chemistry of the pigments of the blood and the bile; the site of formation of bile pigment, the causation of jaundice and disorders of cholesterin metabolism. All of these are difficult subjects, and in most of them knowledge is advancing somewhat slowly. The author gives a clear picture of the present state of knowledge, and in particular explains fully the chemical relationships of the complex substances whose fate he discusses. For example, he points out curious relationships between adenosine phosphate and the digitalis glucosides, both of which have the common property of exerting a selective action on heart muscle. The subject of chemical pathology is naturally difficult because the chemical substances which are studied are mostly of an exceptional complexity, but the author gives a very clear and interesting account of the problems which he considers.

[7] *A Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease.* By the late Arthur R. Cushny, M.A., M.D., LL.D., F.R.S. Tenth edition, thoroughly revised by C. W. Edmunds, A.B., M.D., and J. A. Gunn, M.A., M.D., D.Sc. London: J. and A. Churchill, Ltd. 1934. (Pp. 786; 75 figures. 25s.)

[8] Individual Psychology Pamphlets, No. 12. London: C. W. Daniel Company. 1934. (Pp. 57. 2s. 6d. net.)

[9] *Le Traitement des Albuminuries Juveniles.* Par Dr. F. Rathery. Paris: J. B. Baillière et Fils. 1934. (Pp. 52. 8 fr.)

[10] *Stoffwechselprobleme, Vortrage aus dem Gebiete der Physio-Pathologie.* Von Professor S. J. Thannhauser. Berlin: J. Springer. 1934. (Pp. 101. R.M.4.80.)

The richly documented monograph on Angina Pectoris[11] by Dr. GREGORIO N. MARTINEZ, professor of clinical medicine at Cordoba in the Argentine Republic, contains a full and up-to-date account of the history, aetiology, pathogenesis, symptomatology, diagnosis, prognosis, and treatment of the condition, with a record of forty-nine personal cases in patients aged from 16 to 74, illustrated by electrocardiograms. A bibliography of 652 references, in which British literature is well represented, is appended.

Keith Lucas[12] is an outline, but in some ways quite as pleasing as a full-dress edition, of a projected memoir of a physiologist of outstanding ability who lost his life in an aeroplane accident in 1916 when 37 years old. The late Sir Walter Fletcher had collected eight appreciations of various phases of Keith Lucas's life from his friends, and had written two accounts of him as an undergraduate and as a Fellow of Trinity College, Cambridge. Professor E. D. Adrian, the pupil and colleague, who in 1917 edited Keith Lucas's Page May Lecture (1914) on "The Conduction of the Nervous Impulse" (vide review in these columns, 1918, i, 84), has now added a sympathetic estimate of his physiological activities at Cambridge during the ten years 1904–14, and writes with a personal touch that is particularly attractive; no one, he says, "who worked with him could think of Keith Lucas except as a friend." His work was entirely devoted to the properties of nerve and muscle. The late Professor H. H. Turner, who was a lifelong friend, and who, with three other contributors, has followed Keith Lucas behind the veil, shows that his versatile genius was largely that of an engineer. This, as is brought out by the three contributors writing on his work in the war, was of invaluable service to the efficiency of the Royal Flying Corps.

The *Proceedings* of the third conference of the International Association of Preventive Paediatrics have now been issued, and the volume contains an account of the two discussions held at Luxembourg in September, 1933. The first of these dealt with the prophylaxis of infantile paralysis and the second with the prevention of what is termed "influenzal diseases in early childhood," although what is meant is the wider subject of catarrhal infections of the respiratory tract. This produced a particularly valuable discussion, emphasizing the danger to the young baby of even simple nasopharyngeal infections among the nursing staff.

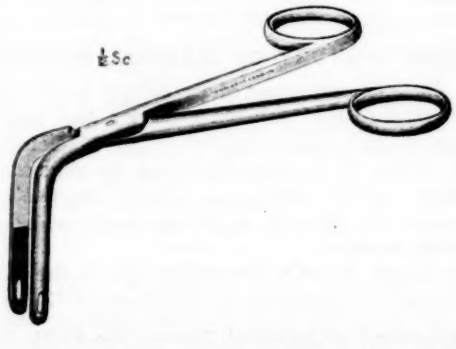
[11] *La Angina de Pecho.* By Gregorio N. Martinez. Buenos Aires: Humberto Andreetta. 1933. (Pp. 280; illustrated.)

[12] *Keith Lucas.* Cambridge: W. Heffer and Sons, Ltd. 1934. (Pp. 131. 5s. net.)

Preparations and Appliances

PYELO-LITHOTOMY FORCEPS

Mr. W. K. IRWIN, F.R.C.S. (London, W.), writes: Owing to a slight oversight the first pattern of the pyelo-lithotomy



forceps made to my design was illustrated in the *British Medical Journal* of June 9th (p. 1034). The new model is now shown in the accompanying illustration. It is obtainable from Messrs. Down Bros., St. Thomas's Street, S.E.1.

CONFERENCE OF VOLUNTARY HOSPITALS

A Conference of Voluntary Hospitals in Great Britain and Ireland was held in London from June 13th to 16th under the auspices of the British Hospitals Association and the Incorporated Association of Hospital Officers. It was attended by some 500 delegates of both bodies, and at meetings held at the Guildhall and in the halls of the City Companies a number of papers were read on matters of hospital administration and policy. In the afternoons various London hospitals were visited.

The conference was opened on the first morning by H.R.H. THE PRINCE OF WALES, who was received by the Lord Mayor and the Hon. Sir Arthur Stanley, who acted as chairman of the conference. The Prince expressed his pleasure at meeting such a large gathering of friends of hospitals, and briefly commented upon the various subjects on the programme. He said that one matter in which he himself had been specially interested was the problem of the out-patient department, apropos of the valuable report recently issued by King Edward's Hospital Fund for London. Another matter of great importance to the health services of the country and to the future of the voluntary hospitals was the co-operation between the voluntary and municipal hospitals. The growth in size and complexity of the buildings necessary to provide accommodation for the sick and departmental facilities for their treatment had made the task of hospital building one of very great difficulty, and the conference would have the benefit of a special discussion on the hospital and its architect. The small hospitals had not been forgotten in arranging the programme. Throughout the length and breadth of the land there were some 400 hospitals of small size, all doing good and unceasing work. These hospitals, placed as they were on the main lines of traffic, had had to face a heavy responsibility in connexion with the treatment of the accident cases which were brought to their doors, and he was glad to know that Parliament was now endeavouring to devise legislation which was designed to relieve them of their burden so far as finance was concerned. His Royal Highness also commented on the fact that hospital administration on the Continent was to be the subject of another discussion, for, he said, the hospital world was without national boundaries, and in Great Britain they did not believe that they had nothing to learn from other countries and other systems.

THE OUT-PATIENT DEPARTMENT

Lord MACMILLAN took the chair at the first discussion, which was on the out-patient department, a subject which, he said, to those engaged in the practical work of hospitals, presented one of the most important and difficult problems of administration. The problem had two aspects, one of policy and the other of method. The questions of policy were of this order: whether the out-patient department as now run in most hospitals was best performing the functions which it was designed to serve, from the point of view of attendance by the right type of patient, both in respect to economic status and to the ailments from which those who attended were suffering. The handling of patients in the out-patient department was itself a very difficult problem. It was impossible to deal with it on a merely mechanical and arithmetical basis. The uncertainties of the cases which had to be dealt with must interpose, and the out-patient must resign himself to some period of waiting. He referred appreciatively to the work of the Out-Patient Arrangements Committee, presided over by Sir John Rose Bradford, which was continuing the work of the committee of inquiry set up by the King Edward's Hospital Fund. One of its labours had been to devise standard forms for doctors in sending patients to out-patient departments, and another had been to draw up model time-tables for use in the departments.

The EARL OF ONSLOW, who acted as chairman of the Out-Patient Committee, said that one of the chief causes of the crowded attendances was the popularity of the hospitals and their out-patient departments. These departments had the fullest confidence of the public, and it seemed that there were a great number of people who might just as well go elsewhere for their treatment but preferred to go to the hospital. While undoubtedly a certain amount of waiting was unavoidable, much could be done by time-saving methods and also by reducing the number of patients. Old-fashioned and inadequate accommodation was responsible for a good deal of difficulty. It had been asked whether hospitals could not adopt the appointment system, but he thought there would be trouble in carrying that out, partly because of the unpunctuality of patients and partly because such a system would hinder the proper allocation of patients as between consultants and assistants. Hospitals might arrange to provide consultants with secretarial assistance, which would go some way towards alleviating the problem. As for lessening the number of patients treated in hospital, he noticed that the British Medical Association advocated that, except in cases of emergency, no person should be accepted for treatment at a hospital unless he brought with him a doctor's letter. If this was carried out rigidly and logically it would make the out-patient department of all hospitals a purely consultative institution. As a counsel of perfection there was much to be said for it, but he thought it was impossible to make the out-patient department purely consultative. The necessity of obtaining a doctor's letter would be very unpopular. A patient might have the feeling that his doctor did not understand his case, and that he would like a second opinion from the hospital, but he would be deterred if it meant that he had to go to his doctor for a letter before obtaining such second opinion.

AVAILABILITY OF HOSPITAL SERVICES

Sir ROBERT BOLAM, in initiating a brief discussion, laid down four propositions which it seemed to him emerged from the report of the King Edward's Hospital Fund Committee. These were: (1) that the out-patient departments, generally speaking, were so overcrowded that the consultants and specialists working therein were not utilized to the best advantage; (2) the net result of this overcrowding was delay and waiting on the part of patients; (3) the co-ordination between the general medical practitioner services to the community outside the hospital and the consultant and specialist service within the hospital was not yet sufficiently developed; and (4) the only remedy was to educate the hospital-going public by co-operative and sustained effort on the part of the hospitals and the medical profession. The team work in a large hospital, which was so invaluable, inevitably meant delay, but it had also to be remembered that the consultations with the other consultants and specialists and the particular services available at a well-equipped hospital could furnish the required service to the patient in as many hours as it needed days in the case of the private citizen seeking medical aid in the usual way. Some economy of time might be made, and a great deal of exasperation saved, if a fuller use were made of informative and directional signs for the benefit of those who were not regular habitués of the hospitals. Was it too much to hope that in the ideal hospital of the future the anxious patient would encounter an experienced and courteous usher, with sufficient subordinate messengers to deal with those who could not find their way without personal assistance? The matter of dispensing had aroused some criticism and attention. The prescription habit in the British nation had become very much more common since the period of national health insurance, and some large hospitals used the prescription system extensively instead of maintaining large dispensaries. The day had gone by for such slogans as "The ever-open door," "Free service to all," "No one turned away," because these gave rise to the mistaken impression that the hospital was available for all kinds of services, and that was an uneconomic proposition. The time had come to teach the hospital-going people what services were available in the hospital, and how such services differed from the kind of services obtained at the hands of the

general practitioner outside. With regard to doctors' letters, Sir Robert Bolam affirmed that the proportion of doctors who resented having to refer their patients to a hospital or consultant was negligible. In ordinary life the general medical practitioner was the sifter of cases. A good many matters he could deal with personally himself. Others had to be referred to consultants and specialists for admission to nursing homes or hospitals. It would seem that to use a consultant or specialist as the sifting agent in a general hospital was to put him to do general practitioner work. One would be far from denying that there were a good many who would do this very well, but was it in fact what the consultant was appointed for? Most hospitals relegated the sifting process to a junior member of the staff, and that junior member was acting in such a capacity as a general medical practitioner. It followed that as much of this discriminating process as possible should be done before the patient reached the hospital, and therein lay the value of the doctor's letter. The residuum of persons who had difficulty in finding a doctor to recommend them to a hospital nowadays must be very small. It was only where the public medical assistance was not fully developed that such could be the case. It was not beyond the bounds of possibility that a public authority should make an arrangement with the hospital to provide a public assistance medical officer to take part in dealing with such cases. In conclusion, the hospital habits of our people would not be changed in a few days because decisions were made and principles enunciated, and whatever the plight of the institutions or the wish of the profession might be in this matter we would be well advised to recognize the essential conservatism of the rest, and be satisfied with reasonable progress towards the consultative ideal to be attained within the next four or five years.

THE PRIVATE PRACTITIONER

In further discussion, Sir HENRY BRACKENBURY replied to Lord Onslow's comments on the British Medical Association proposition that the out-patient department should be confined, or almost confined, to consultative work. There were actually hospitals which had converted their out-patient departments practically into consultative departments, so that the proposition was not as impracticable as might be supposed. But the fundamental idea was that the hiatus between the field of hospital work and the field of private practitioner work should be eliminated. One of the present evils was that the hospital field of work and the private practitioner field had been to a large extent divorced from one another. In some ways that had been the fault of the teaching hospitals in the past, but he was sure that the young student just qualified and the resident medical officer in the hospital had got into their heads somehow or other that the general practitioner outside was somebody who was not very well worth considering, and need not be considered very much in relation to the amount of work which they had been accustomed to observe from the hospital staff point of view. That was a wrong notion; the general practitioner outside in his ordinary surroundings was much more capable of dealing with and helping the patients who came to the out-patient departments than anyone else. Therefore it was of the utmost importance that the general practitioner outside, doing the domiciliary work, should be considered an essential part of, and in very close association with, the work of the hospital itself. From that point of view there was much to be said for insisting that before the patient went to hospital the opinion of the general practitioner should be considered. Not only so, but when hospital attention was no longer necessary for the patient, although he was still not perfectly recovered, it was most desirable that he should be referred to the general practitioner for care instead of being continued in the out-patient department of the hospital. It should be primarily the family doctor to whom such patients were referred, and not primarily the district nurse.

Time did not allow any further discussion, but the applause which greeted Sir Henry Brackenbury's remarks suggested that this point of view was not unacceptable to hospital administrators.

CO-OPERATION BETWEEN VOLUNTARY AND MUNICIPAL HOSPITAL AUTHORITIES

At a later session, under the chairmanship of Lord RIDDELL, the subject of co-operation between voluntary and municipal hospital authorities was discussed.

Sir GEORGE NEWMAN, in an opening paper, gave a table representing the present hospital accommodation in England and Wales. This showed that the number of hospitals provided by local authorities was 858, with 143,494 beds, and the voluntary hospitals numbered 988, with 71,956 beds. Of the local authorities' hospitals, 326, with 57,129 beds, were provided under the aegis of the public health, and 532, with 86,365 beds, under the aegis of public assistance. Of the hospitals not provided by local authorities, 663, with 49,673 beds, were general, and 325, with 22,283 beds, were special.

It was clear, said Sir George Newman, that the only sensible course to pursue was to develop a practical and unified system of co-operation between these two classes of hospitals. As a result of the Act of 1929, many of the former Poor Law hospitals had become municipal hospitals for the benefit of the public in need of medical treatment, and not, as formerly, for the destitute poor only. Thus there had been created the beginnings of a national hospital system. As the municipal hospitals expanded there might seem to the casual observer to be less need of the voluntary hospitals. Which was the wiser: to put all hospitals, voluntary and municipal, on a municipal basis of rates and taxes, and allow the voluntary movement to disappear, or to combine the two in one co-operative hospital system? He was strongly in favour of the latter course, and believed that a co-operative system was likely, if properly organized, to be more economical in the long run than a rate-aided State system without the voluntary element, and it provided for the peculiar English genius a practical compromise between collectivism and individualism. He asked the gathering to consider what the voluntary hospital had done. It had encouraged the pioneering spirit of discovery which had strangely but steadily led English medicine hitherto. For more than 200 years it had provided ways and means for the foundation and development of all the great schools of medicine in the universities, and in its atmosphere had been trained, among others, all the doctors for all the municipal hospitals. A teaching hospital, like a university, lived by unhampered freedom of thought, and in their national hospital system the English people would do wisely to provide ample room for the exercise and application of the voluntary system. But the ever-widening and importunate medical needs of the population had not been met in the past, and could not be met in the future, wholly by voluntary hospitals. The municipal hospital represented the formulated will of a free people. It was a hospital provided by the State, deriving its sustenance from rates and taxes, its direction from the elected representatives of the municipality, and its authority from Parliament. It was between these two types of national institutions that the Act of 1929, followed by the Minister's circular, had sought to ensure co-operation. The authorities and the voluntary hospitals had not put into the fullest operation of which they were capable the powers afforded by that Act. But more had been done by the State in support of voluntary hospitals than some persons appeared to assume. Financial grants had been furnished by local authorities for new buildings and equipment. Special grants had been made for the treatment of various conditions. Only a few days ago a county council made a grant of £10,000 towards the rebuilding of a voluntary hospital. The London County Council was paying grants at a yearly rate of £250,000 to voluntary hospitals, and upwards of £125,000 was paid last year by approved societies for the in-patient treatment of insured persons in those institutions. Further, there had been much interchange of function, of the services of consultant staff, and of the use of special beds, apparatus, or installations as between the two types of hospitals. It could not be said that even yet in all areas there was real and effective consultation or co-operation. Such consultation was a statutory obligation, but it could not take place until

the voluntary hospitals of the area and their medical staffs had established a representative committee, had informed the local authority of its existence, and were prepared, jointly with the authority, to consider the institutional and hospital requirements of the district.

No Wasteful Competition

In conclusion, Sir George Newman permitted himself four general observations. The greater the good will and genuine desire for co-operation for the common good, the more fruitful would be mutual consultation. The survey reports of the medical officers of the Ministry showed that the desire for co-operation was widespread, and that many forms of practical co-ordination were being practised on both sides. But there was some fear on the part of voluntary hospital representatives that local authorities intended to compete unduly with the voluntary hospitals. As a fact, however, public authorities could not afford to engage in wasteful competition or the duplication of existing facilities. The local authority, while it should not attempt to compete, had a definite statutory responsibility to the community to supplement the work of voluntary hospitals and fill gaps which the latter were unable to fill, or had not in fact filled. It was obligatory upon the authority to consult with representatives of the voluntary hospitals when providing, allocating, or adapting its accommodation in discharge of the functions with which it was entrusted, and it was obvious that such consultation should take place before the decisions of the authority had been reached, and not only afterwards. Finally, the local authority should do all that was practicable, with foresight and prudence, to foster and aid appropriate voluntary organizations in its area, both for hospital services and for the development of public health provision of the people, which were implicit in the new organization laid down by the Act. On their part also the voluntary hospitals in every area should create competent and representative bodies to organize and co-ordinate their own work and to consult with the local authority on hospital needs.

Lord COZENS-HARDY said it was taking the voluntary hospitals a very long time to realize the enormous changes in the hospital system of the country which must ensue from the Act of 1929. The voluntary hospitals had been inclined to be suspicious of that Act and of the wide powers and duties which it conferred upon local authorities. The Act itself limited compulsory consultation to a narrow field, and the extent of co-operation would depend upon the attitude of the Ministry and the direction in which the Ministry encouraged the local authorities to move. The early circulars of the Minister seemed to point in the right direction, but not perhaps so clearly as to remove suspicion from the minds of the voluntary hospitals. A clear pronouncement, such as had been given by Sir George Newman, that there were important functions, such as teaching and research, which the voluntary hospitals could best perform in the interests of the community, was to be welcomed, also that the hospital service as a whole could not produce its best results without close and continuous co-operation between the local authorities and the voluntary hospitals. What was needed was something more than a mere "Section 13 body" but a joint committee between the local authority and the voluntary hospitals meeting regularly to consider everything bearing on the hospital service as a whole. Proposals for extensions, whether by the local authority or by the voluntary hospitals, should be considered by some such committee before action was taken.

Co-operation of Hospitals in Mental Hygiene

Mr. L. G. BROCK (Chairman of the Board of Control) gave some practical illustrations of co-operation between voluntary hospitals and municipal institutions in the field of mental hygiene. For some years there had been a growing co-operation between the London mental hospitals and the London medical schools. The mental hospitals realized that many of their patients were physically very sick people, so that an arrangement had grown up whereby there was an informal alliance between the mental hospital and the medical school, the latter providing the consultants who came regularly to visit new patients in the mental hospitals, while the mental hospitals provided the psychiatrists for the instruction of the medical students. A second form of co-operation was in the provision of out-patient mental clinics by voluntary hospitals, following the passing of the Mental Treatment Act.

Dr. C. E. S. FLEMMING said that it was for the voluntary hospitals to adopt and adapt such of the methods of the municipal hospitals as they could usefully employ, including co-ordination and co-operation, and economy in buildings and maintenance. They prided themselves upon their "voluntaryism," but it must be remembered that a volunteer was of no use unless he was a member of an organized army. Voluntary hospitals must cast aside that parochialism which had been their weakness in the past, otherwise they would not be able to hold their position in the hospital service of the country. Already the municipal hospitals were in close competition with them on one point—namely, in the open market for medical officers—and as to whether the prestige of the voluntary hospitals would enable them for long to obtain the men and women they wanted he was rather doubtful.

A number of lay hospital administrators from various parts of the country contributed briefly to the discussion. A Gloucestershire representative urged the importance of endeavouring to get the chairman of the voluntary hospital elected a member of the local authority. Following on this point a Mexborough representative said that four members on his board of management were members of the West Riding County Council, and one of them was chairman of the Public Health Committee. A Sheffield representative said that his was one of the first cities to create a co-ordinating committee between the municipality and the voluntary hospitals. There were four voluntary hospitals in Sheffield, and they were all represented on a committee which included also representatives of the municipality, and the chair was filled in alternate years by a municipal and by a voluntary hospital representative. An arrangement was also in being whereby a considerable number of patients coming to voluntary hospitals were transferred to municipal hospital beds.

Lord RIDDELL, in closing the discussion, referred to the excellent results which had already been achieved by the Joint Hospitals Committee in London.

The Cottage Hospital

Other discussions at the four days' conference must have briefer mention. Mr. W. M. GOODENOUGH, honorary treasurer of the Radcliffe Infirmary, Oxford, read a paper on the function of the cottage hospital. Its main function, he said, was to deal with minor medical and surgical cases which did not call for special treatment, but it might have a further use for convalescent cases, and perhaps as a residential centre for district nurses. Lord HORDER, who took the chair at this discussion, referred to the various therapeutic assets of a cottage hospital—its quietness, its proximity to patients' friends, and its adaptability to the work of routine observation. Dr. C. E. S. FLEMMING preferred the term "district hospital," which suggested that it was for the people of the district and staffed by district practitioners. Specialist members of the staff of the central hospital should be available, but only for the purpose of consultation or emergency operation. There was a tendency in some of these hospitals to expect the work to be done by members of the staff of the central hospital. One objection was the possibility of complications arising after operation, when the specialist himself was not present; another was that the extra equipment and nursing for this kind of work imposed an unusual strain on the small hospital. On the other hand, minor cases—a term the speaker disliked—were pre-eminently suitable for the care of the practitioner at the district or cottage hospital. These small institutions were distinctly needed for the completion of the hospital service of the country, and it might be very dangerous to interfere with their development by rigid rules.

HOSPITAL ADMINISTRATION ON THE CONTINENT

Dr. RENÉ SAND, technical counsellor of the League of Red Cross Societies, gave an address on the situation of hospitals on the Continent. His account of the municipal hospitals of France was a little depressing. Too economical administration, overcrowded wards, non-recognition of hospital technique, superannuated buildings, lay superintendents—"nobody is satisfied, but the system is such that nobody could be." Improvements were, however, taking place. In Paris the maternity hospitals and many surgical departments now ranked as excellent. Lyons was building well-equipped hospitals. The new hospital in Rheims kept half its patients in single rooms, and no ward had more than four beds. Nancy and Strasbourg had models of hospital administration and building. Lille was planning a huge hospital centre of 5,000 beds in two buildings of thirty floors each, walled entirely by steel and glass, and ventilated by conditioned air. New resources were being opened up by sickness insurance funds, which paid for the hospital treatment of ten million members, and the insured population was insisting on better hospital conditions.

In a brief survey of other countries, Dr. Sand said that Italy was rapidly renovating its hospitals: eight great hospitals had been opened in recent years, eighteen were being built, and many more were planned. Rome, Milan, Turin, Venice, and Naples would soon have a complete and modern hospital system. Spain was making great strides, and there were few out-patient clinics in the world to rival the Red Cross dispensary in Madrid. In Austria there was a hospital plan for the whole country, which was divided into hospital districts. In Scandinavian countries the planning, maintenance, and administration of hospitals had been for centuries the function of the State, the countries, and the great cities. In these countries, as well as in Germany, Holland, and Switzerland, the hospital superintendents were generally doctors. He had visited only a few hospitals and maternity institutions in Soviet Russia, and he spoke of them highly. In Germany the economic crisis had compelled some hospitals to close wings and curtail staff, but difficulties there as elsewhere had the advantage of fostering initiative and devotion.

HOSPITAL ARCHITECTURE

Mr. STANLEY HALL read a useful paper on hospital architecture. The choice of a building committee, he declared, was almost as important as the choice of an architect. The most satisfactory way of co-ordinating the various interests was to appoint a technical committee of physicians and surgeons, who would report to a very small lay committee directly responsible to the board. The work of the technical committee should be to obtain from all the specialists their requirements as to particular departments, to decide upon the order of urgency, and to determine, and if necessary to limit, the requirements of each specialist. The total number of beds required must first be settled; then the question of the number of patients for each nursing unit, which was a very important instruction for the architect before planning his ward blocks. The number and disposition of the operating theatres had next to be settled. A grouping of theatres into one unit was advantageous economically; twin theatres could often share one large sterilizing room and plant. The accommodation of students in theatres in teaching hospitals was a tax on the resources of the architect. Casualty and out-patient departments were various in their methods of working. The number of medical and surgical consulting rooms must be settled according to the number of honorary officers and assistants who would be holding sessions at the same time. Mr. Hall dealt with other points of detail, such as the housing of the nursing, domestic, and administrative staff, the boiler-house and other services, and the pathological block. Having cut out the parts of the jigsaw puzzle, the next business was to place them in their correct relation. The casualty and out-patient departments must be easily accessible to the public.

THE ALMONER'S WORK

The final discussion was on aspects of almoner's work. Miss CHERRY MORRIS, lady almoner of St. Thomas's, said that the ideal of the almoner was to secure the maximum of necessary information with a minimum of inquiry. She must be just alike towards the patient and towards the hospital, must not make demands on patients which would entail too great a sacrifice, and must not let herself be deceived by plausible persons. The future of almoners' work was threatened by a real danger, just because the almoner had shown herself too good a financier. In the minds of certain people—and some of the medical profession were not blameless—the financial side had been stressed to the exclusion of everything else. The question before hospital boards was often not whether the almoner would increase the efficiency of the hospital, but whether her department could be made to pay. If this tendency grew the consequences would be serious. Medical men would lose what was potentially a valuable auxiliary service in the treatment of the sick, for the almoner's profession would cease to attract to its ranks the best type of educated woman.

GUILDHALL BANQUET

A Guildhall banquet, over which H.R.H. The DUKE OF YORK presided, and which was attended by about 600 guests, was held in connexion with the conference. The Lord Mayor and Lady Mayoress were present, and in every part of the hall one saw people prominent in hospital administration and service. The Duke of York spoke of the great work of the voluntary hospitals in tending the sick and suffering, educating medical students, and investigating the causes of disease. On many occasions since the war, he said, members of his family had been associated with appeals for funds, and had been in a position to appreciate at first hand the results of this work. He felt that in difficult times the way in which the public had contributed to hospitals had been quite wonderful.

Lord STANMORE, treasurer of St. Bartholomew's, said that although the financial difficulties of the voluntary hospitals were very much to the fore, even during the blackest financial period of this century the hospitals as a body had ended each year with a substantial credit balance, and in the history of any individual hospital over a period of years the balances of the credit years weighed down the scale against the balances of the years of deficits. The threat of closing down was often heard, but instances of any institution closing down for lack of funds were almost unknown. He spoke also of the elasticity of the voluntary system. While it clung to certain traditions, it had been able to adjust itself to conditions which in any progressive country were constantly changing. It could not, of course, meet all needs. There were those for which only the State could provide, and the voluntary hospitals were anxious to co-operate in every possible way with the State; but within their own boundaries they could and did provide that which from time to time was found to be necessary. He referred especially to the provision of hospital beds for those who had in the past been accustomed to be treated in times of sickness in their own homes.

Lord HORDER, in responding to the toast of "The Guests," said that many of those present were rather incongruously described as guests. Sir Holburt Waring, President of the Royal College of Surgeons, for example, had been intimately associated with hospitals throughout his career, and Sir Henry Brackenbury, Chairman of Council of the British Medical Association, had with others on that body done much to formulate a hospital policy in which the general practitioner had his place. The British ideal of the voluntary system was a noble one, but it needed watching, and its friends were not altogether happy in all respects, especially with regard to the undignified manner in which financial support was sometimes sought. Although he personally felt that the voluntary system, breathing as it did the spirit of freedom and independence, would and must go on, this did not mean that some methods employed on its behalf were of permanent value, or that it would not have to adapt and change itself to changing conditions.

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THE WAR AGAINST CANCER

Dr. Jacques Bandaline's monograph on the international war against cancer,[1] to which the Joest Prize for 1933 has been awarded by the Académie des Sciences Morales et Politiques, was originally written to appear in connexion with the International Cancer Congress held at Madrid in October, 1933. Its preparation has occupied the author's whole time since 1926, and it provides an exceedingly interesting and complete summary of cancer research up to the date of its appearance. Only those who have themselves been employed on literary research work can appreciate the magnitude of the task undertaken by Dr. Bandaline, the almost infinitely scrupulous attention to detail and the linguistic attainments which have made its publication possible. The author is to be warmly congratulated upon the successful achievement of a truly herculean task. Work of this kind is, we think, but seldom appreciated at its true value, and too often there is a tendency to undervalue the inestimable importance of scientific *literary* research work. Laboratory and clinical investigations are of necessity scattered among a vast number of publications, which, needless to say, are written in as many languages as there are nationalities represented. Any comprehensive review of such work requires, in addition to an adequate knowledge of several foreign languages, a critical examination of the scientific value of the papers laid under contribution, and thus a combination of attainments of no common order.

In Dr. Bandaline's work the reader will find a historical summary of the cancer question, commencing with a brief account of mention of the disease in the Rig-Veda and the Ebers papyrus, through the Greek period and the Latin and mediaeval schools up to the present time. Obviously we have not space at our disposal for even a cursory glance at these matters, which in themselves are of absorbing interest. Passing to the eighteenth century we read how, probably owing in part to error of diagnosis, the disease was regarded as contagious, a view which led to the infliction of unnecessary cruelties upon the unfortunate sufferers from a terrible disease. They were excluded from the general hospitals—in France at any rate—and forced to shift for themselves as best they could. It was to a canon of Rheims, Jean Godinot, that we owe the foundation of the earliest cancer hospital, which was opened in that city in 1740, and was equipped with the modest number of twelve beds. Even then the dread of the infectious nature of the fell disease alarmed the citizens, and in 1779 the hospital was moved to La Buérie in connexion with additions to the Hôpital St. Louis. At that time, of course, nothing was known of the nature of infection or of the methods by which it could be dealt with, so that the citizens of Rheims must not be judged too harshly for the infliction of cruelty which had its origin in panic and ignorance. To France, therefore, must be accorded the honour of having provided the first hospital for the treatment of patients suffering from cancer, to the special investigation of which Dr. Bernard Peyrilhe of Lyons devoted his attention. In England the place of honour must be accorded to the Middlesex Hospital, with the formation in 1791 of its Cancer Charity, which has devoted unremitting attention to the subject up to the present time.

From time to time theories of the causation of cancer were propounded and methods of treatment suggested, but it was not until 1901, when the work of the Danish pathologist Jensen appeared, that the modern era of scientific and systematic research commenced. In this country the Imperial Cancer Research Laboratories were opened in 1902, and at intervals institutions upon similar lines have been formed in most civilized countries. Dr. Bandaline has obtained official information upon the work of these bodies in no fewer than sixty-one different States, so that his book gives a view at once comprehensive and authoritative of cancer research work all over the world. In many, at any rate, of these countries the question of educating the public upon the subject of cancer has been assiduously pursued, and in the present state of our knowledge this is undoubtedly the sphere in which the general practitioner can contribute assistance of inestimable value in the world-wide campaign against cancer. By emphasizing the fact that cancer, *if taken in time*, is frequently amenable to treatment by modern methods, and that radiotherapy in many cases has supplanted those mutilating and devastating operations which were formerly regarded as necessary, he can reassure those who are in doubt but are afraid to face the truth. The remarkable results which have followed the use of radium and *x* rays in the treatment of, for example, cancer of the cervix uteri and of the tongue should be sufficient to demonstrate what has been achieved in this direction.

One of the great difficulties attending the treatment of cancer with any hope or possibility of success has been the delay, usually prompted by fear, in seeking medical advice. Not unnaturally both the patient and the family medical adviser felt that to get a definite diagnosis of cancer was equivalent to passing sentence of death. Delay means simply that a condition which in its early stage will respond to treatment has become so extensive or so disseminated that when submitted for expert advice it has become almost hopeless. In cases judged inoperable or incurable much can still be done by radiotherapeutic methods to render the patient's remaining span of life much more tolerable and often relatively comfortable. It has been shown how in the past a false conception of the infectious nature of cancer must have inflicted almost incalculable suffering ; it is for us to see at the present time that

[1] *La Lutte Internationale Contre le Cancer.* Par Dr. Jacques Bandaline. Paris: N. Maloine. (135 fr. ; abroad, 145 fr.)

equally unnecessary suffering is not caused by delay. Above all, even if the disease is not seen until it has become inoperable and apparently "hopeless," yet relief is generally possible, and that to an extent which must be seen to be believed.

HYPERINSULINISM AND DYSINSULINISM

The conception of hyperinsulinism and its establishment as a clinical entity was first considered by Seale Harris in 1923, soon after the general appreciation of the importance of the discovery of insulin itself. Since then many cases of hyperinsulinism have been described, which have varied from a transient post-prandial hypoglycaemia to most severe hypoglycaemia with shock, convulsions, and coma. In a recently compiled series of 1,497 non-diabetic cases Harris found that the fasting blood sugar in fifty-one patients was abnormally high, and in sixty-seven abnormally low, from which he concludes that "hyperinsulinism occurs almost as frequently as hypo-insulinism." He recommends the estimation of blood sugar and glucose-tolerance tests in cases of unexplained nervous attacks, periods of unconsciousness and convulsions, and in cases where the diagnosis of grand mal or petit mal may seem a little doubtful. It is within the experience of everybody that many people complain of a "sinking feeling" between meals, and that such persons soon learn that the ingestion of chocolate or food of carbohydrate nature rapidly relieves them. Physiological hyperinsulinism is readily seen in many cases after the test dose of glucose in a sugar-tolerance test, the blood sugar at the end of two hours or so often falling much below the initial value. This used to be explained as a stimulus to the glycogenic function of the liver, but there seems now little doubt that it is due to a stimulus to the insulinogenic processes. Harris suggests that such physiological hyperinsulinism, when excessive, may, by exhaustion of the islets, lead to diabetes, and by the stimulus of excessive hunger (a symptom of hypoglycaemia) lead to the exogenous obesity which so often precedes diabetes. Such cases are readily treated by restriction of the insulinogenic stimulus—namely, carbohydrate—and more frequent feeding. Very severe cases may need glucose. Such excessive hypoglycaemic responses may arise from factors other than the secretory activity of the islets of Langerhans—for example, inadequate function of the adrenals and the pituitary.

Most striking are those cases of hyperinsulinism which are attributable to an adenoma of the islet tissue. An addition to the reports of such cases has recently been made by Ross and Tomasch.[1] Their case was a man of 33 who had been brought to hospital as a "drunk," having fallen in the street and sustained considerable injuries about the head. After a series of investigations it was found that he was a case of hyperinsulinism, and that on a diet of 1,800 calories with 60 grams of carbohydrate he developed hypoglycaemia shocks (blood sugar 23 mg. per 100 c.cm.) every six hours or so. A striking feature in these patients is that glucose-tolerance tests give curves starting at hypoglycaemic levels but rising to very high values, and maintaining a diabetic character for some time, without, in some instances, giving rise to glysosuria. Laparotomy revealed a cystic nodule in the pancreas, the removal of which led to complete disappearance of the syndrome. Histological examination showed that the nodule was a tumour of the islet tissue. These authors confirm the finding of others that in hypoglycaemic coma the plantar response is extensor—of diagnostic importance particularly where diabetic coma might be suspected, the response in the latter being flexor. Recently a very thorough study of five adenomata of the islets has been made by O'Leary and Womack.[1] The best methods were used by these workers for demonstrating the characteristic granules of the islet cells, and careful comparisons with normal cells were made. The tumours were in general small, but in one instance the dimensions were 9 cm. × 9 cm. × 11 cm., the tumour being nodular and cystic. Certain definite differences were recorded between the histological properties of the granules in the tumour cells and those of normal islet cells, indicating that the syndrome of hyperinsulinism may be due to a modified form of insulin and not merely to an excessive secretion of the normal hormone. These findings were all the more interesting in that the pancreatic islets adjacent to the tumour islet tissue were quite normal in their histological characteristics. Autolytic changes produce marked changes in normal islet cells in a short time, but tumour islet cells are for some reason remarkably resistant to this process and retain unchanged their histological characters even after twenty-four hours in Ringer solution. The evidence goes to show that in the tumour the cells are all of the β-cell type, with greater or less modified staining affinities. The tumours all contained small ducts histologically akin to the smaller pancreatic ducts, and evidence was obtained of the differentiation of duct epithelium into islet tissue, which shows that the duct cells are capable of giving rise to both the externally secreting acinar tissue and the internally secreting islets.

[1] *Arch. of Surg.*, February, 1934.

TUBERCULOSIS IN CHILDREN

The correspondence which followed our last reference to this subject[2] was one indication of the increasing interest shown. It is perhaps disappointing that investigation in England of many of the difficult aspects of tuberculosis in childhood seems to lag behind that in other countries, notably Scotland, France, Germany, and the United States. Recently in these columns Dr. G. G. Kayne described[3] how Professor P. F. Armand-Delille and his pupils in Paris are correlating the clinical and radiographic findings during life with the

[1] *Arch. of Path.*, March, 1934.
[2] *British Medical Journal*, 1933, ii, 1035.
[3] Ibid., March 3rd, 1934, p. 370.

pathological state discovered at necropsy. Somewhat similar work is described in a paper[1] from the departments of paediatrics and pathology of Yale University School of Medicine, one of a series of papers dealing with work made possible by a special research fund and carried out for the research committee of the National Tuberculosis Association. Dr. Margaret L. Bronson and her colleagues have studied the radiographic appearances of the chests of fourteen children, and have correlated these with detailed clinical and pathological data. The records in certain instances cover a period of years, with a whole series of *x*-ray examinations. A large group of radiograms from children with non-tuberculous conditions of the lungs was also taken into consideration. Since the study was essentially based upon the *x*-ray findings the details of the methods used are important. It is recommended that radiograms should be taken with the chest in the position of complete inspiration ; six-foot target-film distance is held to be best ; oblique views of the thorax to demonstrate the mediastinum are mentioned as important ; and the necessity of enough exposure to bring out calcium deposits is emphasized. Various points of great importance emerge from these studies. For example, large homogeneous lobar shadows, mottled shadows (localized or disseminated), and even so-called " infiltration " may or may not be due to tuberculosis. The close resemblance between the radiographic appearances of non-tuberculous and tuberculous conditions means that the demonstration of cavity formation or of the presence of calcium becomes very valuable in favouring the latter. Another point well illustrated in the present series is that a radiogram is sometimes essentially negative, although the thoracic contents of which the film is a projection are extensively involved in proved pathological processes. A second paper[2] in this series deals with pulmonary tuberculosis in infants under 2 years of age. Dr. Ethel Dunham shows convincingly the paramount importance of direct exposure to infection from human sources. In the seven cases studied in detail in her series the mother was the source of infection in three, and in one case each the father, a sister, a nursemaid, and a cousin living with the family. Four of these persons were known to have positive sputa, and the other three died of tuberculosis subsequent to the exposure of the infants. A second point of interest emerging from this study is that, while the ultimate fate of such young subjects must remain doubtful until far more extensive follow-up investigations have been carried out, it is certainly becoming more and more realized that previous work, based so much upon hospital statistics, has exaggerated the mortality at this young age. Four of the seven children in this series are considered well some years after first coming under observation, two are still under treatment, and one died of tuberculous meningitis at the age of 5 years. A third study[3] may also be briefly mentioned here. It concerns the somewhat vexed question of the relation of phlyctenular conjunctivitis to tuberculosis. Drs. M. Goldstein and C. L. Wood have studied seventy-one children from 10 months to 12 years of age with this condition of the eyes, and they adduce very strong evidence of underlying tuberculous infection in the majority of cases. Tuberculin tests, *x*-ray examinations not only of the chest but also of the neck, abdomen, and the bones, in a search for a possible tuberculous focus, positive history of contact, and physical signs of tuberculosis, all came into consideration ; the combined evidence makes an impressive and convincing case. The importance of radiological examination of the neck is a novel point, and it is interesting that the only *x*-ray evidence of tuberculosis was found in the neck and abdomen in eighteen instances—nearly 40 per cent. of the positive films.

[1] *Amer. Journ. Dis. Child.*, 1934, xlvii, 104.
[2] Ibid., 1934, xlvii, 149.
[3] Ibid., 1934, xlvii, 171.

ASPIRATION TREATMENT OF LARYNGEAL DIPHTHERIA

The investigation of cases of laryngeal diphtheria by means of direct laryngoscopy and their treatment by mechanical suction of recent years has made slow if definite progress. In this country the work of Joe[1] and Benson[2] has familiarized us with the procedure, and though a steadily diminishing incidence of croup appears to be one of the main features of the present epidemic type of diphtheria, and consequently not the problem it was a decade ago, it is gradually being taken up by the large infectious hospitals: the published results in Great Britain indicate that a properly cautious attitude has been maintained. It is agreed that valuable aid in diagnosis and treatment may be obtained, but in all series of cases a larger or smaller proportion have ultimately required intubation or tracheotomy. It is interesting, therefore, to compare these views with those of Lemariey and Hamon,[3] who give an account of four years' experience of the procedure in Paris. Their technique is the same as generally practised, except that they prefer a suction cannula with a blind end and one or two lateral fenestrae near the tip instead of one with a terminal opening, and in addition to clearing out the larynx and trachea they apply suction to the main bronchi when necessary. Compared with the older operation of indirect intubation they claim advantages in respect of the fact that instruments are directly under visual control ; the procedure can be applied to an oedematous and ulcerated larynx ; hoarseness and aphonia are less persistent ; and they have not encountered a single case of chronic stenosis. Heart failure, which Lemariey and Hamon regard as one of the most noteworthy complications during intubation, is rare in aspiration, and respiratory difficulties during suction can be quickly countered by the introduction into the trachea of a cannula transmitting oxygen. Their assertion that intubation renders the feeding of the child practically impossible is difficult to understand, but the easier feeding of the aspirated patient is also claimed as an advantage. They regard aspiration as the only rational method of treatment of tracheo-bronchial diphtheria, and believe that in cases complicated by bronchopneumonia aspiration of secretions followed by intratracheal oxygen is at least of temporary benefit. As a result of their observations Lemariey and Hamon have classified the various forms of croup as follows.

[1] Report to the Metropolitan Asylums Board, December 10th, 1929.
[2] *Lancet*, October 31st, 1931, p. 956.
[3] *Ann. d'Oto-laryngol.*, 1934, ii, 101.

In benign croup, membrane is present only on the epiglottis and the cords, the subglottic space being free. Results in this form are always favourable, and nine successful cases are reported. Severe croup is distinguished by extensive thick membrane involving the larynx, the subglottic space, and the upper part of the trachea, and four patients came into this category. All recovered—three after aspiration alone, but in one case tracheotomy had to be resorted to. Septic croup is defined as a condition in which muco-purulent membrane covers an oedematous ulcerated mucosa, and an associated bronchopneumonia is the rule. In seven such cases only two recoveries were obtained, all except one, a recovery, being complicated by bronchopneumonia. Tracheo-bronchial diphtheria is disclosed by the presence of membrane in the upper part of the trachea, by the aspiration of bronchial casts, and by the broncho-pulmonary type of dyspnoea: eight cases of this type are reported with four recoveries; three of the cases complicated by bronchopneumonia were fatal. The authors consider that it is in this form that aspiration gives the most striking results, since with intubation or tracheotomy the prognosis is hopeless or very gloomy. Infantile croup is relegated to a category by itself, and is distinguished by the gravity of the dyspnoea, stridor, and profound toxaemia. Three cases of this type succumbed to bronchopneumonia, one to heart failure, whilst one recovered. It is always difficult to prognosticate whether any given case of croup will require operation and will not yield to expectant treatment, but it is a fact that a proportion do. Taking the results of tracheo-bronchial diphtheria alone, however, the results are very encouraging. The authors expressly disclaim any intention of entering into the respective merits of intubation and tracheotomy, but they seem to have had an unfortunate experience of the former. It is curious, therefore, that they have not considered the method of direct intubation by means of the laryngoscope, to which several workers in this country have turned their attention.

TECHNICAL METHODS IN MORBID ANATOMY AND HISTOPATHOLOGY

Outlining a new editorial policy in the March (1934) issue of the *Journal of Technical Methods and Bulletin of the International Association of Medical Museums*, No. XIII, Dr. Robert A. Moore, for the Editorial Committee, points out that a distinct contribution to the systematic indexing of scientific material would be made if the periodical mentioned above were to confine itself exclusively to communications directly concerning these fields. He states that, though there are three large national journals dealing with morbid anatomy and histopathology in the English language, his alone is devoted to technical methods with special reference to museum and laboratory procedures. It is therefore intended to limit the scope of the bulletin of the association to museum and necropsy technique, photographic methods, microscopical technique (especially as applied to museum material), injection methods, and teratology, especially congenital anomalies of the heart. The bulletin is to be made an annual publication, and will still contain the proceedings of the association and reports on its special activities, more particularly those of the International Index of Medical Museums. The present issue, which runs to 200 pages, includes editorials, descriptions of museums, book reviews, proceedings, and reports. A considerable number of pages are devoted to original communications on such subjects as museum administration, cataloguing, etc., museum and necropsy technique, photographic methods, microscopical technique, and a number of case records. The volume, edited, like its predecessors, by Dr. Maude Abbott, is well illustrated, and should prove of the greatest interest to those concerned with the teaching of morbid anatomy, histology, and pathology in general.

A NUTRITIONAL STUDY OF BELGIAN UNEMPLOYED

An investigation into the living conditions and budgets of insured unemployed in Brussels was carried out in 1932, and the sociological results have already been published. Bigwood and Roost now record the nutritional data under the title *L'Alimentation Rationnelle*.[1] The facts were obtained from a month's study (January to February) of nineteen families, chosen at random from the lists of unemployed, which comprised ninety-three persons. Quantities of foodstuffs bought or given were entered into notebooks. The analyses of foodstuffs used for computation were chiefly those of Van de Weyer for Belgian produce, with special analyses where necessary. Foodstuffs as consumed probably did not vary more than from −3 to +3 per cent. from analytical tables. Refuse ranged from 7.5 to 14 per cent. of total foodstuffs as bought (average 11 per cent.), high percentages being obtained chiefly where the amount of potatoes was large. Plate-waste was calculated as 1 per cent., intestinal waste as 4 per cent.; protein and carbohydrate were calculated to yield four calories per gram, fat nine calories. Complete tables are given for each family for gross and net calories, grams of animal and vegetable protein, fat, and carbohydrate. The percentage amount of the total gross weight supplied by the various food groups averaged: meat, 9; cereals, etc., 55; vegetables, 6; fruit, 2; fats, 3; eggs, 1; milk, 18; cheese, 0; various, 6. Family coefficients according to different scales are compared, and that adopted takes the woman as unit and allows her 2,600 calories net, the unemployed man being allowed 2,400, or 0.90, and children scaled down according to age to 0.25 for a child under 1 year. The authors reckon that the League of Nations scale of calorie requirement is slightly below that of the Belgian people, as shown by Slosse's investigation into 1,065 working men in 1910. The net calories of the nineteen families varied from −33 to +30 per cent. on the Bigwood-Roost scale, five families being more than 10 per cent. below and therefore certainly receiving insufficient food. Protein averaged 81.5 grams per unit, with a range of 55 grams to 105 grams, of which the animal protein averaged 40 per cent. (range 27 to 52 per cent.). For each gram of protein the average intake of fat was 1.1 grams, and of carbohydrate 4.6 grams. The minerals per unit were: phosphorus, 1.44 grams; calcium, 0.74 gram; iron, 0.015 gram; calcium–phosphorus ratio, 1:1.95; calcium–protein ratio, 1:118. Of the vitamins the B complex was probably sufficient,

[1] *L'Alimentation Rationnelle et les Besoins Énergetiques d'une Population Ouvrière*. By Dr. E. J. Bigwood and G. Roost. With a preface by Ernest Mahaim. Bruxelles: Institut de Sociologie Solvay. 1934. (25 fr.)

A or D approximately half of standard requirements, C rather more than half, after allowing for loss in cooking. It must be borne in mind that the number of families studied is too small to allow of general conclusions being drawn. This study rather suffers from lack of sequence in arrangement and of clarity in the graphs. There are nearly a hundred tables, many of which need not have been included, while the addition of more tables summarizing the figures would be of great advantage.

VENEREAL DISEASE IN LITERATURE

In a paper read before the Medical Society for the Study of Venereal Diseases, on May 30th,[1] Dr. J. D. Rolleston maintained that in no department of medicine was a knowledge of the lay writers on the history of the subject more necessary than in the domain of venereal disease, inasmuch as the information both of a positive and of a negative character furnished by contemporary writers—poets, dramatists, novelists, and historians—formed a valuable supplement to that derived from the study of the medical works of the time. Systematic investigation of the references to venereal diseases in non-medical literature, side by side with study of the works of medical historians, had been undertaken by numerous professional writers from Astruc in the eighteenth century to Jeanselme at the present day. Dr. Rolleston then gave a survey of the references to syphilis, gonorrhoea, and chancroid. Syphilis was first considered under the headings of the Bible, classical antiquity, the Middle Ages, the Elizabethan age, the seventeenth century, the eighteenth century, and modern times. The conclusion reached was that there was no definite description of syphilis in Europe before 1495, whereas subsequently there was an immense amount of literature, lay as well as medical, dealing with various aspects of the new disease. The best-known foreign lay writers on the subject in the sixteenth century were Guicciardini the historian, Erasmus, and Rabelais. Though more than eighty years elapsed before the outbreak of syphilis at the end of the fifteenth century received attention in British medical literature, when William Clowes published his treatise on the venereal disease in 1576, several references to the new disease had appeared much earlier in the Scottish poets William Dunbar and Sir David Lindsay. In the Elizabethan age numerous allusions to syphilis were to be found in Shakespeare, as well as in the contemporary dramatists such as Chapman and Beaumont and Fletcher. The prevalence and severity of syphilis throughout the eighteenth century received mention in numerous non-medical works such as the stories, history, and philosophical writings of Voltaire, the *Mémoires* of Casanova, the novels of Defoe, Fielding, and Smollett, the poems of Swift and Gay, and the letters of Lord Chesterfield. The most remarkable feature of the belletristic literature of the nineteenth century connected with syphilis was that it contained for the first time descriptions of tabes and general paralysis, as shown by the allusions to the former in the works of Heine, Alphonse Daudet, Kipling, and Conan Doyle, and to the latter in Ibsen, Maupassant, and the De Goncourts. The antisyphilitic campaign in the French plays and novels at the beginning of the present century appears to have been inspired by Alfred Fournier. The earliest description of gonorrhoea is that given in Leviticus. From the middle of the sixteenth century gonorrhoea and syphilis were regarded as the same disease, the term "clap" being often applied to the necrotic lesions of tertiary syphilis and "pox" to acute gonorrhoea. The attempts made to prove the existence of syphilis in Europe before the end of the sixteenth century, as exemplified in Beckett's communications to the Royal Society in 1718 and 1721, were due to mistaking the description of gonorrhoea in the mediaeval documents for syphilis. After mentioning literary allusions to gonorrhoea and its complications, Dr. Rolleston maintained that the history of chancroid was probably as old as that of gonorrhoea, for it was known in ancient Greece and Rome. The first undoubted description of the disease, however, was given by Palladias in the fourth century A.D. Chancroid appears to have been frequent throughout the Middle Ages as well as in classical antiquity, but owing to the identification of syphilis and chancroid which took place within six years of the appearance of syphilis in Europe, it was not likely that any distinct description of chancroid would appear in non-medical literature.

[1] To be published in full in the *British Journal of Venereal Diseases*, the organ of the society.

DRAWING THE G.M.C.

One of the best of the London evening newspapers, if we are rightly informed, has embarked upon a little plan by which it hopes to "draw" the General Medical Council. The idea seems to be to publish in the gossip column, from time to time, paragraphs about medical men of greater or less celebrity, giving their names, ages, addresses, birthmarks, and so forth, in the agreeably intimate manner reserved hitherto for politicians, jockeys, actors and others who court the limelight of the Press. In this way it is hoped to divert the public and to provoke the G.M.C. into taking disciplinary action against the persons named. How long the game will continue we will not venture to predict. Our opinion, for what it may be worth, is that newspaper readers will begin to weary of it in a few weeks' time or less, and (if the analogy will not be taken in ill part) that the catspaws are likely to scratch the monkey before the monkey gets the chestnut.

VISIT OF MEDICAL SECRETARY TO GENEVA

The International Labour Office has lately been considering the question of the economical administration of medical and pharmaceutical benefits under social insurance schemes, and a preliminary consultation on this subject with experts in various countries has encouraged the Office to pursue its inquiry further. A committee of experts will meet in Geneva on July 9th to consider a draft dealing with economical prescribing under sickness insurance schemes, and the Medical Secretary, Dr. G. C. Anderson, has accepted an invitation to sit on this committee as the representative of the British Medical Association.

Sir Frederick Gowland Hopkins, P.R.S., has been awarded the Albert medal of the Royal Society of Arts for 1934 in recognition of his researches in biochemistry and the constituents of food.

THE IRISH SWEEPSTAKES AND THE HOSPITALS

[FROM A CORRESPONDENT]

A few notes on the twelfth draw conducted by the Hospitals Trust, Ltd., commonly known as the "Irish Sweep," in connexion with the Derby of this year, may prove of interest to those concerned with the conduct of hospitals in Great Britain. The total amount subscribed does not fall far short of three million pounds. Of this approximately £1,800,000 will be expended in prizes. The hospitals receive £519,489, and Government taxation amounts to £173,029. The remainder is absorbed by expenses and promoters' remuneration.

Reviewing the financial question of the Irish sweepstakes to this date we find that, apart from the figures relating to the draw quoted above, the total amount subscribed by members of the public throughout Ireland, Great Britain, and practically every other country over-seas is £30,000,000. Of this amount approximately £20,000,000 has been distributed in prizes. Experience shows that Great Britain has subscribed approximately two-thirds of the total and has received approximately two-thirds of the prize-money. Ireland's subscriptions and prize-money have each been about 7 per cent. of the total.

The Irish hospitals have received, from the first eleven sweepstakes, considerably over £6,000,000; from the latest sweepstakes they will receive, as mentioned above, a further sum exceeding £500,000. It is worth noting that while the first three or four sweepstakes gave assistance solely to the voluntary hospitals of Ireland the Government of the Free State subsequently took power to allocate part of the proceeds to institutions of a non-voluntary character, including the county hospitals, which have played so large a part in Irish Poor Law institutional treatment and accommodation.

At a later date, going a step further, the Free State Government constituted what was, in effect, a new commission, under the Minister of Public Health, to administer the available surplus accruing to the hospitals in general from the sweepstakes. It is this body which will receive and expend the half-million pounds available from the Derby sweepstakes of this year. As an example of the activity of this commission, and the way in which the money may be expended, it may be mentioned that on June 4th the Minister for Local Government and Public Health of the Free State, Mr. S. T. O'Kelly, laid the foundation stone of a £120,000 extension to Mullingar Mental Hospital, which is regarded as a notable advance in the provision of facilities for mental treatment in the Free State. One-half of the amount required has been found by a grant of 50 per cent. of the cost from the Hospitals Trust, through the agency of the Minister. This is an example of the way in which the Hospitals Trust and the relevant Government authorities are utilizing the proceeds of these sweepstakes to provide for increased hospital facilities as distinct from meeting current expenditure.

AN ENDOWMENT POLICY

The movement which underlies the Irish sweepstakes aims not at meeting only immediate requirements but at providing endowments sufficient to maintain the Irish hospital system for all time. The promoters are not concerned with this year or next year, or the position ten years hence: their object is to ensure that no matter what happens—unless the whole financial structure of Western Europe and America should collapse—the Irish hospitals will be assured at least of a livelihood. That is one aspect of the sweepstakes question which every member of the medical profession in Great Britain should bear in mind. It is not a question of meeting an emergency but of making, so far as is possible, permanent provision for the financing of the hospitals. Lord Powerscourt's remarks at the opening of the Derby draw give a very clear indication of what is in his mind and in the mind of his associates for the future.

It should be noted in this connexion that under the earlier legislation of the Free State governing these sweepstakes the Derby "sweep" would have been the last of the series, but in the interim legislation has been enacted which makes the system permanent.

A PLAN TO AID RESEARCH

Perhaps the most interesting point in the proceedings was the plea of the Lord Mayor of Dublin (Alderman A. Byrne) that in future some part of the proceeds of the sweepstakes should be earmarked for the finance of research work. In declaring the draw closed, on June 6th, Dr. R. J. Rowlette announced that a definite scheme for the promotion of medical research had been formulated for submission to the responsible Free State Minister. This scheme would provide for research not only in Ireland but in other countries. It would enable the ablest of their young medical men and women to travel to any part of the world in the interests of research. The Irish hospitals had to thank not only the people of Ireland but of every part of the world, and in the research scheme opportunities would be offered not only to Irish workers but to capable ambitious workers from other countries.

In a reference to the progress of the hospitals sweepstakes fund in past years, Dr. Rowlette said that a study was now being made of the whole hospital system of the country, and hospitals might be assured that proper demands would, in due course, be met from the accumulated funds. In the course of the next few years they would have well-built and well-equipped hospitals provided with endowments for the future.

CONGRESS ON LYMPHATISM

Under the presidency of Professor A. B. MARFAN an international congress on lymphatism was held at La Bourboule on June 9th and 10th. The papers presented at the scientific sessions were numerous, and dealt with many aspects of the subject.

SCIENTIFIC PAPERS

Under the general heading of "Aetiology and Pathology of Lymphatism" the president, Professor Marfan, opened the first day's proceedings with an important communication, in which he indicated the great difficulty he found over defining the term "lymphatism," and he offered as his own view that this word represented a state characterized by a persistent hyperplasia, more or less generalized, of the lymphatic glands and lymphoid tissue, resulting from a generalized reaction by the organs or tissues to the majority of prolonged injections or intoxications. Professor J. TAILLENS (Lausanne), in a spirited address, attacked the use of the term "lymphatism," stating that in his forty years' experience he had never met a case of this disorder. He believed that what was meant in most instances by the use of the word was a state of enlargement of the lymphatic tissue in the nasopharynx with the attendant possibilities of local and generalized infection. The second general division of the contributions was entitled "Forms and Varieties of Lymphatism." Professor P. LEREBOULLET (Paris) dealt with the condition of "status thymico-lymphaticus," affirming that enlargement of the thymus was not an essential part of this syndrome. Professor V. GILLOT (Algiers) discussed the relation between lymphatism and malaria, concluding that the one had nothing to do with the other. Professor E. GÖRTER (Leyden), accepting the view that lymphatism was part of the exudative diathesis of Czerny, brought forward evidence of endocrine disturbances in "lymphatic" children, more especially dysfunction of the adrenals. A study of the blood sugar levels after injection of adrenaline in such children showed less elevation than in normal controls. Dr. ALAN MONCRIEFF (London) briefly explained the current English view, which did not favour the use of the term "lymphatic diathesis," and pointed out that despite the absence of the word "lymphatism" from the medical vocabulary

in Great Britain the common diagnosis of "T.'s and A.'s" in reality described very much the same sort of child discussed by Continental speakers. Professor C. COHEN (Brussels) described the campaign in Belgium established to deal with the anaemic, debilitated type of child who required convalescence in the country or at the seaside. The therapeutic aspect of the subject was dealt with in a series of papers grouped under the title "Treatment of Lymphatism." Dr. J. ANGLADA (La Bourboule) indicated the type of malady which would be benefited by a course of treatment at this spa. The waters, rich in arsenic, are drunk, injected subcutaneously or intramuscularly, employed as baths or douches, and used as sprays for the nose and pharynx. In addition, La Bourboule offers special facilities for physical treatment of children in organized heliotherapy, open-air gymnastics, and breathing exercises under medical supervision. Dr. J. HALLÉ (Paris) and Dr. P. FERREYROLLES (La Bourboule) described the results of sending children from Paris to La Bourboule. The public assistance officials of the former city have sent over two thousand children to the spa during the past twelve years, obtaining particularly good results in cases of asthma.

SOCIAL FUNCTIONS

This international congress was organized by the Institute of Hydrology and Medical School of Clermont Ferrand, the Mineral Water Company of La Bourboule, the Medical Society of La Bourboule, and the Municipal authorities of that town. It was attended by approximately 500 visitors, who were guests of the Mineral Water Company at a magnificent banquet at the Casino on the evening of June 9th. Visits were paid to the baths, and to the laboratories and wards of the local hospital, while there were many excursions to places of interest in the district, including the neighbouring spa, Mont Dore.

ROCKEFELLER MEDICAL FELLOWSHIPS

The Medical Research Council announces that, on behalf of the Rockefeller Foundation, it has made the following awards of travelling Fellowships for the academic year 1934–5. These Fellowships are awarded to graduates who have had some training in research work, either in the primary sciences of medicine or in clinical medicine and surgery, and who are likely to profit by a period of work abroad before taking up positions for higher teaching or research in the British Isles.

IAN AIRD, M.B., F.R.C.S.Ed., Demonstrator in Anatomy, University of Edinburgh, and Clinical Tutor in Surgery, Royal Infirmary, Edinburgh.

IAN ALFRED ANDERSON, B.Sc., M.B.Aberd., House-Physician, Royal Infirmary, Aberdeen.

ERIC GORDON OASTLER, B.A.Oxon, M.B.Glas., Professor of Physiology, St. Mungo's College, Glasgow, and Assistant Physician, Royal Infirmary, Glasgow.

WILFRED HARDING OWLES, M.A., B.Sc., B.M.Oxon, Resident Medical Registrar, Queen's Hospital, Birmingham.

HAROLD LEEMING SHEEHAN, M.Sc., M.D.Manch., Lecturer in Pathology, University of Manchester.

CLIFFORD WILSON, M.A., B.M.Oxon, Assistant in Pathology, London Hospital.

All the Fellows appointed this year will work at centres in the United States.

The third edition of the *Official Guide Book of Medical Post-Graduate Work in Hungary* gives a well-illustrated account of the various facilities which this steadily growing country offers for advanced medical training. There are four university centres—namely, at Budapest, Szeged, Pecs, and Debrecen. Medical practitioners from other countries are welcomed as students, and detailed information of the various courses of instruction and other opportunities available are obtainable from the headquarters of the Hungarian Medical Post-Graduate Committee, Maria-utca 39, Budapest. A post-graduate course for American practitioners has been arranged for September 10th to 15th.

Scotland

Changes in Glasgow Medical Faculty

At a meeting of the University Court of Glasgow University, held on June 14th, with the Principal, Sir Robert S. Rait, presiding, it was intimated that Professor Munro Kerr would relinquish the Regius chair of midwifery, and Professor Walter K. Hunter the Muirhead chair of medicine, from September 30th next. The Secretary of State for Scotland has announced that applications for the office of Regius professor of midwifery must be sent immediately, with copies of two recent testimonials, to the Private Secretary, Scottish Offices, Whitehall, London, S.W.1.

Welfare of the Blind

The annual conference of the Scottish National Federation for the Welfare of the Blind was held in Aberdeen on June 14th and 15th, and delegates numbering about 200 were received at a civic reception in the town and county hall. Mr. W. R. Halliday, Glasgow, in opening a discussion on the prevention of blindness, recalled that the Federation had been founded ten years ago at Aberdeen. He believed that in Scotland they were far ahead of other countries in the correct certification of blindness. The State was interested in prevention, since it could not afford to lose the potential productivity of any of its citizens. Industrial workers were continually exposing themselves to serious eye dangers, and people were constantly using the naked eye for work which demanded the use of glasses, while others failed to get proper advice and treatment in the early stages of eye disorders. A vigorous campaign of enlightenment, therefore, would be of great advantage to the community. He suggested that a Prevention of Blindness Committee for Scotland should be set up. Mr. C. H. W. Anderson, Edinburgh, said that such a committee ought to be named the Preservation of Sight Committee. A pamphlet on the care of the eye had been prepared by Dr. George Mackay, and distributed to the number of 20,000, and an illustrated leaflet, of which 14,000 copies were circulated, had been published by the Federation. In the course of the discussion the practice of purchasing cheap spectacles was condemned as detrimental to eyesight. On the second day of the conference Mr. William Edgar, president of the Fife Society for the Blind, read a paper on salesmanship by the blind. He said that most societies could give instances of blind persons earning their livelihood by the sale of goods. If this was to be a success, however, training must be practical and theoretical, and efficiency must be promoted by printing receipt slips, bill-heads, etc., in Braille. Captain J. Bell Cumming, Dundee, said that institutions in Scotland were at present finding full-time employment for about 1,000 blind persons, but he believed that salesmanship by the blind was beyond practical politics. At the annual business meeting it was agreed that the model scheme under the Blind Persons Act, 1920, should be sent to all affiliated bodies for their approval.

Care of Scottish Mental Defectives

At the recent conference in Edinburgh of the Scottish Association of Mental Welfare various problems of mental deficiency were discussed. Lord Polwarth said that there was no more difficult question at the present day than that of mental deficiency, and in Scotland they were conscious that there was a lack of accommodation for mentally deficient cases. Dr. M. Hamblin Smith, late superintendent of Birmingham Prison, in a paper on "The Medical Examination of Offenders," said that the most diverse

estimates had been made as to the percentage of delinquents who came within the definitions given in the English Mental Deficiency Acts. These varied from 90 per cent. down to statements made by the managers of reformatory institutions that there were no mental defectives among their inmates. Both of these extremes came from America, but the speaker thought that most workers on this subject would agree that not more than 5 per cent. of delinquents were mental defectives, and that probably 3 per cent. was nearer the truth. He urged that in cases in which mental abnormality was suspected in an accused person the case should be adjourned until the question of the accused's mental condition had been settled. Probation was so easy and apparently so good a mode of disposing of cases of delinquency that resort was often made to it without due consideration of the accused person's mentality. Probation should, however, be made a serious affair, and should always be combined with measures of social rehabilitation. An apparently trivial offence might contain the germ of future difficulties of the utmost moment. Modern students of crime were often accused of wishing to pamper offenders, and it might be that many offenders would prefer to continue the present rough-and-ready measures, but the protection of society was the primary consideration. It would be an advantage, the speaker believed, if there were a psychological assessor in every criminal court. Professor James Drever said that he agreed that the problem of the offender was a psychological one, but at present there were not enough experts to carry out the psychological investigation required in all cases, and the general medical practitioner could not be expected to undertake mental examination any more than to perform a major surgical operation. He believed that more training in psychology and psychiatry should be given to medical students. Dr. W. A. McAllister said that he disagreed with those psychologists who traced everything back to some incident in childhood, for it was very often unnecessary to go far back for an explanation of some misdemeanour.

The High-grade Defective

At the afternoon session a discussion took place on the high-grade mental defective. Dr. W. G. Sym, who presided, said that by the high-grade defective was meant a person who might technically come into the category of feeble-mindedness, but bordered closely on the normal. Such a person did better when boarded out than when placed in an institution, but so long as he was not injurious to others or to himself there was no reason for any segregation. Dr. D. J. Forbes of Baldovan Institution, Dundee, said that at least 8 per 1,000 of the population belonged to the mentally defective class, but of these some 75 per cent. belonged to the higher-grade class. Accordingly the training of higher-grade defectives was a problem of much importance. The quiet and docile type was apt to find his way into an institution owing to unfortunate environment at home or incapacity for education, while the restless, unsettled type who fell into mischief was found in the delinquent class of the outside world. At the age of 16 a number of both classes were discharged from institutions, with a view to earning at least part of their own living and still having protection and supervision, and, when possible, the benefit of the After-Care Association. Dr. Kate Fraser (Edinburgh), dealing with boarded-out defectives, said that many were capable of carrying out useful work in community organizations. Last year over 1,000 certificated defectives were boarded out under guardians who were not relatives. The best type of home for defective boys was the small farm, where they worked in the fields along with the guardian. The girls were best placed in country cottages or in village communities, doing work in gardens or on farms. Under these conditions the mental defective was treated as an ordinary human being, but success in this method of dealing with the mental defective depended upon patience and sympathetic understanding of the guardians. Miss Carmen Service (Paisley) discussed the relation of high-grade defectives to the community, and said that the friendly supervision of local care committees was most important. It had been found that the high-grade defective was well suited to take up work of a routine nature which was monotonous to those of higher intellect. The question of hostels for high-grade defectives deserved consideration, for the hostel was a useful step between an institution and the demands made by life in the community, and it was better than an unsuitable home.

England and Wales

The Harveian Society

The Buckston Browne annual dinner of the Harveian Society of London was held on June 14th in the Connaught Rooms under the chairmanship of Sir Buckston Browne, F.R.C.S., life-president of the society. The guests included the medical heads of the three Services, the President of the Royal Academy, the Regius Professor of Physic at Cambridge, the President of the Royal Society of Medicine, the President of the British College of Obstetricians and Gynaecologists, and the Editors of the *Lancet* and the *British Medical Journal*. After the loyal toasts had been honoured "The Society" was toasted by the Greek Minister, M. Demetrius Caclamanos, who expressed his delight at meeting members of a profession whose patron saints were Aesculapius and Hippocrates, and at enjoying the hospitality of a society founded in honour of the great English exponent of the Greek spirit in science. The chairman, in reply, thanked His Excellency for a charming speech seasoned with Attic salt. He himself, Sir Buckston said, was presiding on this occasion as the representative of the real president, Dr. Hope Gosse, who, though not able to be with them that night, was making a good recovery from his serious motoring accident. The society now numbered nearly four hundred members, and was full of life and vigour. William Harvey understood the value of professional intercourse, and would therefore have rejoiced in the discussions and banquets of the Harveian Society. Looking back over a long life, Sir Buckston Browne noted, with especial pleasure, the steady advance of the medical profession in social esteem. Mr. A. Dickson Wright, who proposed the health of the visitors in graceful terms, said that the Buckston Browne dinner was becoming one of the medical events of the year, and mentioned that their host and chairman was now celebrating the diamond jubilee of his entrance into the profession. Dr. F. M. R. Walshe, the Harveian lecturer, responded briefly in light vein. The Englishman's adulation of the amateur, he said, had gone so far that the expert was everywhere becoming an object of derision ; magic and manipulation had to-day an unequalled opportunity. Mr. F. R. Mortimer, Master of the Barbers' Company, who also responded, touched on the long association, which came to an end in 1745, between surgery and the barber's craft.

The Drought: Emergency Measures

On June 13th the Minister of Health conferred on the question of urban water supplies with members of the Standing Conference on Water Supplies, whose representatives are drawn from various parts of the country. In welcoming the members Sir Hilton Young said that he had called them together to assist on questions arising

out of the drought. The objects in appointing the conference were to secure first-hand information of conditions, to enable him to assess the difficulties to be encountered, and to prepare measures for overcoming the difficulties. The conference gave a review of the position, which showed that, generally, conditions in the towns were fairly good considering the continued absence of rain. In some towns reserves were very low, but there was no reason to think that the water undertakers would not be able to meet the situation, if consumers played their part, with the aid of special additional powers for increasing supplies and improving distribution now readily obtainable under the Water Shortage Act passed last month. The relatively good position in the towns is due in large measure to the economies effected with the co-operation of consumers. In the area of the Metropolitan Water Board a reduction in consumption of over 10 per cent. has been effected by voluntary economies. There is, however, plenty of room for larger reductions, and efforts in this direction must not be relaxed, otherwise difficulties may ensue later in the summer and autumn which can be avoided if reasonable care is taken now. At some places substantial economies have been effected in trade, as well as in domestic, consumption, without any curtailment of supplies needed for trade, which it is important to avoid, and where necessary water undertakers can assist by suggesting ways by which waste may be prevented. The following matters were referred to for more general attention. Water undertakers should keep the public informed in clear and simple terms about the manner and measure of the economies in the use of water required by the local conditions. At some places marked savings have been effected by the loan of qualified waste inspectors from large water undertakers to neighbouring small undertakers. Substantial savings can be effected by transport undertakings and private owners in washing cars. Attention was called to the economies that could be effected by public authorities in the use of water for such purposes as street washing and watering in public parks.

Out-Patient Time-Tables at London Voluntary Hospitals

Arising out of the inquiry conducted by a special committee into out-patient methods in the London voluntary hospitals, King Edward's Hospital Fund has published a revised edition of the Hospital Out-patient Time-table, giving information which, it is hoped, will be useful in preventing the waiting, with possible resulting hardship, which occurs when patients attend hospital out-patient departments at the wrong hour or even on the wrong day. This time-table, which has been revised to May, 1934, sets out the hours at which medical, surgical, and other special cases are dealt with at the various hospitals in the King's Fund area (within a radius of eleven miles from St. Paul's). It should be of assistance not only to general practitioners who may wish to send their patients for consultations, but also to the various social agencies, by whom the actual arrangements for the attendance of out-patients at hospital often have to be made. The time-table, which can either be kept folded as an octavo booklet or unfolded in quarto form and inserted in a telephone directory, may be obtained free of charge from Messrs. Geo. Barber and Son, Ltd., Furnival Street, E.C.4.

Cancer Research

In March, 1933, the International Cancer Research Foundation, established by Mr. William H. Donner of Philadelphia, awarded £1,000 per annum for a period of two years to the Research Institute of the Cancer Hospital (Free), London, in support of investigations into factors which underlie the origin of malignant growths. This grant has provided two research scholarships, which are held by Mr. G. A. D. Haslewood, M.Sc., who is working with Dr. J. W. Cook in the Research Institute, and by Miss Edna Roe, B.Sc., who is studying the molecular structure of carcinogenic compounds by physical methods. Miss Roe is working under Dr. Mayneord, in the physics section of the radiological department of the Cancer Hospital. The grant has also defrayed a part of the cost of this work. Under the direction of Dr. Cook, Mr. Haslewood has recently prepared a very active cancer-producing compound, methylcholanthrene, from another compound, deoxycholic acid, which is known to occur in the human body. To assist in further developments of this work the trustees of the International Cancer Research Foundation have now decided that this grant shall be continued for an additional three years, until June 1st, 1938.

Ireland

Restoration of the "Cut" in Northern Ireland

The Chairman (Dr. D. Gray), the vice-chairman (Dr. R. Henry), and the secretary (Dr. S. E. A. Acheson) of the Central Practitioners' Committee of Northern Ireland recently had an interview with the Minister of Labour (the Right Hon. J. M. Andrews), who acts as Minister of Health for Northern Ireland. They put before him the claims of insurance medical practitioners in Northern Ireland to be treated similarly to their colleagues in Great Britain. At a subsequent meeting the Minister said he was pleased to be able to inform the deputation that half of the "cut" would be restored as from July 1st. A similar concession would be granted to the chemists.

Coombe Lying-in Hospital, Dublin

The clinical report for 1933 of the Coombe Lying-in Hospital, Dublin, is, as usual, mainly statistical. In the twelve months 1,430 patients were admitted to the maternity department, and of these 1,279 were delivered in hospital. This represents an increase of twenty-seven admissions and a decrease of nine deliveries in comparison with the figures of the preceding year. Overcrowding in the hospital has become a most serious problem, and in 1933, probably for the first time in the history of the institution, it was found necessary to refuse admission to about thirty women, many of them already in labour, owing to lack of a vacant bed. In some of these cases nurses and students returned home with the patients to conduct the confinements. For others accommodation was found in the Rotunda and the National Maternity Hospitals. No attempt has been made in the report to separate booked from emergency cases. It is argued that such a distinction is not justly applicable to the Coombe Hospital patients, most of whom are taken in without ceremony on their own request. When patients have attended the pre-natal clinic this fact is noted in the report if it appears to be relevant. There were nine deaths last year, and the B.M.A. morbidity rate was 2.1 per cent. A change was made throughout the year in the conduct of normal deliveries, the birth of the head being permitted without any intervention. This practice, it is stated, has led to an increase of 6 per cent. in the frequency of perineal tears. It is, however, thought to be worth a more extended trial, since its introduction coincides with the lowest morbidity rate yet recorded in the hospital. Perineal lacerations numbered 249; of these 187 occurred in primiparae, four being complete. In the extern department 1,517 patients were delivered, an increase of thirty-seven over the figure for the previous year. Perineal tears were recorded in ninety cases. There were 478 admissions to the gynaecological department; palliative treatment alone was required in ninety of these cases, and radium was used in eight instances.

Reports of Societies

PREVENTION OF TUBERCULOSIS

ANNUAL CONFERENCE IN LONDON

The twentieth annual conference of the National Association for the Prevention of Tuberculosis was held on June 14th and 15th, in the Conference Hall of the London County Council, under the chairmanship of Sir ROBERT PHILIP. Since the national scheme for the prevention and control of this disease had been originally based on the recommendations of the Departmental Committee on Tuberculosis (1912–13), the proceedings were directed mainly to a review of the experience gained during twenty-one years.

Lord SNELL (Chairman of the London County Council) welcomed the conference, the work of which, he said, was of supreme social importance. London had now abolished any waiting by applicants for tuberculosis treatment. The selecting of some of the parks' staff from members of the Burrow Hill Colony had proved a great success.

Sir HILTON YOUNG, Minister of Health, paid a warm tribute to the work of the National Association, since its inauguration in 1898, in marshalling and instructing public opinion. Voluntary efforts had brought into being the first dispensaries and sanatoria. Then had followed the provisions in the Insurance Act for tuberculous insured persons, and the adoption by the Government of the findings of the Astor Committee. He reviewed the progress that had been made, and expressed regret that there was still much too great a tendency to ignore the early symptoms. There had been many factors concerned in the greatly reduced incidence of tuberculosis, but he was convinced that there would be no final success in the campaign against the disease until its slum breeding places had been eradicated.

EXPERIENCE OF TWENTY-ONE YEARS

Lord ASTOR (Chairman of the Departmental Committee on Tuberculosis) reviewed the history of the last twenty-one years, beginning with a reference to the work of that very composite body, which had from the first been much concerned with the respective merits of rival forms of treatment. Its recommendations, owing to the outbreak of war, had been stopped from coming into effect until 1919–21. The importance of prevention had been emphasized from the start, and many health measures in industry and elsewhere had owed their origin to the stressing of this outlook. Although over 40 per cent. of cows were infected, the number yielding infected milk was only 2 per cent., but about 5 per cent. of human tuberculosis was traceable to this cause. Some of the decline in the incidence of the disease in children was attributable to preventive measures in this sphere. Further improvement as regards the milk supply was rather retarded by differences of outlook in certain Government Departments. There were too many brands of tuberculin of differing potencies on the market, but all were at present recognized officially for testing purposes. There was also a variability as regards the skill of different veterinary practitioners, and so their results were not fairly comparable always. Standardization of tuberculin was an urgent need, with restriction to the employment of one type. Research had made great advances, and had been kept free from any departmental control.

Dr. A. SALUSBURY MACNALTY (senior medical officer, Ministry of Health) contributed details from the public health and medical aspects. After publication of the report of the Departmental Committee, and the then Local Government Board had begun to bring the recommendations therein into effect, the chief problem was found to be the provision of residential institutional accommodation. The outbreak of war arrested progress temporarily, but at its end the work was continued and extended. At present the obvious field for activity was the instruction of the general public as to the early signs and symptoms of tuberculosis. The State had realized the existence of complex factors favouring the disease, such as certain forms of occupation, malnutrition, overcrowding, and bad sanitary environment, and it was appreciated that all measures directed towards the health and improvement of the nation generally were important contributions toward the prevention of tuberculosis. Anti-tuberculosis work was now regarded as an integral part of public health, and the medical officer of health could marshal and co-ordinate all branches of the service in the prevention of the disease. Every advance in treatment and all proved methods of therapy were brought to the notice of local authorities and their medical officers. Still more attention needed to be paid to the examination of contacts, and to the provision of adequate after-care for cases of arrested disease, with special reference to home surroundings and occupation.

Dr. N. D. BARDSWELL (principal assistant medical officer, L.C.C.) reviewed the treatment of tuberculosis in London since 1913, with special reference to the way in which all the existing efficient agencies, both voluntary and official, had been augumented and fitted into a comprehensive scheme. This now comprised a central co-ordinating authority at the County Hall which provided residential treatment, and thirty-five dispensaries in the various London boroughs linked up with neighbouring hospitals. A decline of nearly 40 per cent. in pulmonary tuberculosis, and of over 75 per cent. in non-pulmonary tuberculosis, from 1911 to 1933 was striking evidence of the improvement that had resulted. Although other factors were concerned in this falling incidence, which had, indeed, been observable since 1875, he believed that the special efforts directed towards the prevention of tuberculosis during the past twenty-one years had materially contributed to the diminution of the disease. In that period no body of sick persons in London had gained so much as those suffering from tuberculosis. The high ideal set before public authorities in 1913 that no tuberculous person in their areas should be unknown to them, or be without the opportunity of skilled advice and treatment, had been achieved in London. Collapse therapy had effected some remarkable successes, but necessitated a high degree of skill. It had not yet affected the statistics of the ultimate results of treatment, and was certainly not suitable for general use. The popularity of tuberculin treatment had gradually faded away, and was not to-day seriously considered as a cure. Boarding out of two groups of children was practised—namely, those living under specially dangerous conditions as regards infection, and those who would be left unattended if the woman of the household went away for treatment. The number dealt with thus each year was about 200. Of about 3,500 beds maintained by the London County Council for the treatment of tuberculosis, 1,500 were in institutions outside its own jurisdiction.

Sir JOHN ROBERTSON (professor of public health, Birmingham) emphasized the point that much more could yet be done to reduce the number of new cases. Statistics showed that the mortality from all forms of tuberculosis was 2¾ times as great among the unskilled as among the middle class, and that the mortality among the skilled artisan was nearly double that in the upper and middle classes. More instruction should be made available, and much greater care should be taken of contacts than was the case at present in some areas. Young contacts should be kept under observation for as long as five years, and facilities be available for those who needed special treatment. Home visits were essential in these cases. Many industries employing young persons might be brought under the purview of the Home Office with a view to getting better conditions of work established. Clerks and shop assistants, who did not come under the Factory Acts, might with advantage be included for the purpose of tuberculosis prevention. It did not seem to be beyond the power of the present factory organization to require a health certificate of fitness to enter a particular employment. If there was found an undue incidence of the disease among those who had been healthy on entrance, some liability under the Workmen's Compensation Act would soon bring into operation improvement in the conditions of work.

THE TUBERCULOSIS DISPENSARY

Dr. G. LISSANT COX (central tuberculosis officer, Lancashire County Council), opening a discussion on the place and uses of the tuberculosis dispensary, said that this was essentially not a building but an organization made up of many factors, of which the human factor was not the least important. The dispensary unit should work in unity with the institutional unit, and it was the lack of this unity which was the real reason of much of the prevailing ineffective work. In London there were two controlling authorities—the metropolitan borough and the county council—where there should only be one. Further, administrative changes required to be made so that the tuberculosis officer should be at one and the same time a medical superintendent, visiting or resident, and the medical superintendent be in part a tuberculosis dispensary officer. He would thus see as a whole the complex problem presented by each patient, and consult with the family doctor. When first brought into being, dispensary units had been much too small, and this had probably been the cause of an unnecessarily low and ineffective standard of work. The size of a dispensary unit, measured by the population it served, should be about 200,000 in a rural area and 300,000 in an urban district. The very small local authorities of 50,000 to 100,000 population should combine for dispensary and institutional work. Each unit must have an *x*-ray plant available, and the tuberculosis officer should be able to interpret his own skiagrams. There must also be a room for artificial pneumothorax refills, and at the larger dispensaries a room or rooms for an artificial light clinic. The unit should be large enough to necessitate a graded staff.

Dr. D. MELVILLE DUNLOP (department of tuberculosis, Edinburgh) thought that in many instances the dispensary hours were too short and too crowded with work. Inflated attendances should be discouraged, and chronic bronchitic and asthmatic patients discharged. Secretarial assistance was often inadequate. The banding together of small dispensary units should be hastened. Treatment should be of a specific and not of a symptomatic kind. The tuberculosis officer should, however, be not only a clinician, but also a supervisor of public health requirements, the claims of the individual patient not being overstressed to the exclusion of the claims of the community. The examination of contacts, and particularly of contact children, was one of the most important functions of the dispensary in the prevention of tuberculosis. Interviewing of the family enabled useful readjustments of the mode of life to be suggested. It was sad that the dispensary and the school medical service were so often segregated in watertight compartments, with little or no interrelation. Medical students might well attend in order to study the tuberculosis problem as it occurred in real medical practice.

In the general discussion which followed it was suggested that the dispensaries ought to be attached to the teaching and public assistance hospitals, tuberculosis officers looking forward to clinical rather than administrative preferment. Dr. J. G. WILSON of Cardiff thought that each of the three dispensary schemes did well in suitable areas. He had had personal experience of the excellent work of the Lancashire scheme, but the small unit of 54,000 had a specially intimate touch and good co-ordination, which he had found commendable apart from the admitted financial difficulties. The Welsh National Memorial was a magnificent machine, but lacked the personal touch. Other recommendations were the paying of more attention to signs of undernourishment in contacts even in the absence of suspicious signs and symptoms, the reduction of hours of work in dust-laden atmospheres, and the substitution of the terms "dispensary" and "tuberculosis officer" by "chest or health centre" and "tuberculosis physician."

RESIDENTIAL INSTITUTIONS

Dr. JAMES WATT (medical superintendent, King George V Sanatorium, Godalming) opened a discussion on residential institutions by pointing out how great a change had been brought about in them by the big strides made in radiography of the chest and the advances in collapse therapy. The work of an up-to-date chest hospital or sanatorium now revolved round its *x*-ray department. The consequent demonstration of pleural adhesions preventing satisfactory collapse of the diseased lung had led to the development of thoracoscopy, and the cutting of adhesions by electric currents. In a modern sanatorium collapse therapy was undertaken in from 20 to 50 per cent. of the cases. The sanatorium no longer resembled a convalescent home but a hospital; whereas formerly about 20 per cent. of the patients were confined to bed, it was now common to find only about 50 per cent. ambulant cases. One nurse to six beds was usual, and the cost had advanced from the Departmental Committee's estimate of £150 per bed to £500 or £700. Earlier and more frequent surgical intervention was now usual, and thoracoplasty, the most drastic form of collapse therapy, offered an almost equal chance of recovery to patients who under the old methods had no more than a one in four or one in five chance of survival. With this change in outlook, the sanatorium was now preferably situated on the outskirts of a town, easily accessible to visiting consultants. In addition to treating in-patients, it should be the centre for diagnosis, have an out-patient department for pneumothorax refills, and take over dispensary functions, including after-care. Dr. Watt thought that these changes had rendered the sanatorium a far more effective weapon against tuberculosis than it had ever been, and that its outlook for the future was very promising.

Dr. R. C. WINGFIELD (medical superintendent, Brompton Hospital Sanatorium, Frimley) thought that now in 1934 the old-style sanatorium was no longer the main treatment centre, but rather a polishing and testing centre where, under skilled supervision, the patient was tested and trained for his return to the stresses of everyday life, or was sent back to the hospital bed for more energetic treatment if required. There was no uniformity of sanatorium work in this country. In some areas, as in London, there were large sanatoria each designed for a particular type of case, serving the institutional needs of several districts, and working under an authority different from that of the dispensaries which they served. This divorce of sanatorium from dispensary treatment was very unsound. In Wales there was the same system, but the inclusion of sanatoria and dispensaries under the one authority allowed surer co-operation. In Surrey one large central institution was utilized more or less for all types of case, and was under the same authorities as were the dispensaries. Some sanatoria served more than one county, while the older proprietary institutions treated cases for many local authorities by private arrangement, and had no official relations with the dispensaries. Finally, the Lancashire method tended to multiply smaller institutions, but linked them as closely as possible with the dispensaries, in some cases placing both under the same medical officer. The independence and pre-eminence of the old-style sanatoria had been mistakenly perpetuated in most developments of the national tuberculosis scheme. This life-long disease was not cured by collapse therapy or sojourn in a sanatorium, and the dispensary, with its field work, must be the chief unit of a successful service. The present general tendency to starve the dispensaries financially for the benefit of the sanatorium was as unsound scientifically as it was practically uneconomic. At least as much money must be allocated by the public authority to its dispensary as to its institutional service.

Dr. J. B. MCDOUGALL (medical director, British Legion Village, Preston Hall) said that in the past too much attention had been paid to the purely medical aspects of tuberculosis and not enough to the important economic considerations. The failure of after-care committees in many parts of the country had been due to lack of financial support. After-care, using the term in its widest sense, had made less progress in efficiency than any other branch of the anti-tuberculosis scheme. The village settlement, as exemplified at Papworth and Preston Hall, where about £200,000 worth of goods was sold annually to the public, and approximately £50,000 was paid in wages to ex-patients, might be regarded as the ideal, but local authorities had been deterred in many cases by

financial considerations. There were many posts in sanatoria which could well be filled by ex-patients. Why should after-care schemes be condemned as uneconomic when this condition was not imposed on sanatoria? Without prolonged treatment it was impossible to obtain good results in at least half the cases. In the village settlement the family as a whole was cared for as carefully as the patient. The time had come for an organization like the National Association for the Prevention of Tuberculosis to place before local authorities, not one scheme, but the choice of one or more of a large number of schemes which had been successful in this and in other countries.

Dr. F. R. G. HEAF (medical superintendent, Colindale Hospital, Hendon) believed that tuberculosis hospitals should be situated near large towns, and be able to accommodate early febrile cases requiring rest in bed, cases needing special treatment, particularly major surgical operations; advanced cases with some prospects of improvement; and a certain number of hopeless cases. They should also be centres for research work. A unit for thoracic surgery became more efficient and economical the more it was used. These hospitals should therefore be used for the treatment of all forms of chronic pulmonary diseases, and it was a bad policy to send all advanced cases to one institution. Patients requiring routine rest and exercises should not be kept at a tuberculosis hospital, but centres of occupational therapy should be established at hospitals and in towns near to patients' homes. The establishment of rest homes for advanced cases with unsuitable homes of their own was recommended, some form of employment being provided. The ambulant advanced case was more dangerous to the community than the bed-ridden one.

CO-ORDINATION IN A TUBERCULOSIS SCHEME

The co-ordination of the several elements in a tuberculosis scheme was discussed by Dr. H. P. NEWSHOLME (medical officer of health for Birmingham), who said that in that city there had been no difficulty two years ago in charging the chief clinical tuberculosis officer with all aspects of tuberculosis work, including the control of statistical and other clerks, and of nurses previously under a general administrative officer, as well as the regulation of inspection of home conditions. The link with the general health activities of the city had been effectively forged by a regular weekly conference between the medical officer of health and the chief tuberculosis officer, and by contact between the latter and other officers engaged in administration as occasion arose. Action in regard to defective housing and the provision of better accommodation was followed up by the administrative staff, on receipt of information sent in by the tuberculosis department. In Birmingham the tuberculosis service had been welded into a unit which was unusually self-controlled and adjusted. Linked up with this was the high degree of co-ordination between the dispensary in its capacity as clearing-house and the beds for sanatorium and hospital cases, for children, for observation cases, and for surgical tuberculosis, as well as for the transfer of tuberculous patients to and from general and special hospitals, whether municipal or voluntary. The occupational scheme was established at the central sanatorium. The home conditions were reported directly to the dispensary, and housing defects were remedied through the general public health department; better housing was acquired through that department and the estates department, and shelters or bedding were distributed through the hospital steward's section of the public health department. Extra food was provided by special arrangements with food tradesmen, and monetary and other assistance by the public assistance department. Details were given of the close liaison built up between the tuberculosis work and the maternity and child welfare service, and also of the arrangements with the school medical service. Similarly good relations existed with general practitioners and the managements of the voluntary and municipal hospitals.

AFTER-CARE

A comprehensive account of the duties and possibilities of after-care was contributed by Miss EDITH MCGAW (honorary secretary, Paddington Tuberculosis Dispensary), who insisted that the care committee was as much an integral part of the tuberculosis dispensary as the dispensary was of the national scheme. Yet there were only about 150 care committees in the country in comparison with 750 dispensaries. Tuberculosis was a many-sided social problem as well as a medical question. The family, not the individual patient, was the unit. The re-creation of that family's home was as essential as the treatment of its members. Miss McGaw described the organization of the care committee, which she thought should preferably be small. Its members could give much help in the homes, including instruction about the cooking of food and the amount of clothing desirable. Outfits could be provided for patients proceeding to sanatoria, incomes augmented, and suitable employment found. Assistance for a time was often needed as regards the home work, and handicraft classes could be encouraged. A wider realization of the value of voluntary workers would have promoted the establishment of care committees, and brought nearer the day of the ending of tuberculosis.

Illustrations of the value of after-care in the Highlands were given by Miss A. E. WHITE, a nurse commissioner on the staff of the National Association.

CORRESPONDENCE

Endocrines—Fact and Fancy

SIR,—The departing steps of the postman coincide with the rustle of masses of falling envelopes; the recipient rapidly separates the obvious wheat from the chaff, the latter being without delay excreted into the suitable receiver. Only occasionally, as, for instance, when a dividend warrant has recently gone astray through not being marked distinctly enough on the outside "Not a circular," does the disillusioned victim inspect the ground-bait. Among the glut of prospectuses, appeals from hospitals, specious and insidious insurance propaganda, puffs of spas from home and abroad, and offers of samples of the "Stop me and try one" type, one cannot fail to be struck by the prevalent scientific journal issued by the big drug firm.

To what extent the profession is influenced by this type of publication as a form of post-graduate education is not for me to say, but at least it must be admitted that the thing is well done. Below a competently extracted account of Blosky's paper on the treatment of nervous affections of the urinary tract is a footnote to the effect that "Quieto" is the ideal sedative for spasmodic conditions; the reviewer of Jones-Robinson's monograph on gall-stones casually mentions "Cholestero" as the perfect solvent of biliary concretions.

The preceding fiction is no exaggeration of the art at its most blatant. The more insidious form is found in the modern endocrine advertisement: here, indeed, is an appeal to scientific instincts and measured judgement. Such best-sellers as "Recent researches in endocrinology state——," "Every well-informed practitioner knows that——," "The modern treatment of —— recognizes to the utmost the importance of taking into account endocrine influences," "The correlation of endocrine functions," etc., jostle each other in just the same way as do the established clichés of ordinary commercial advertisement. There is appropriate genuflexion to every article of the creed. In the case in point, however (the endocrine preparations available to the up-to-date practitioner), there cannot be the slightest doubt.

The use of the extract of whatever gland is vouched for by Drs. A to Z (decorously concealed, of course, in deference to the G.M.C.), who have subjected it to rigorously conducted clinical trials in "this type of endocrine dysfunction," in "a series of cases of hormonic dyscrasia," "instances of glandular hypofunction," etc.; the unnamed investigators, with all scientific reserve and due reticence, even with obvious initial scepticism, report "Good results," "Appreciable improvement," and "Definite amelioration."

Of one particular aspect of glandular failure let there be not the least misgiving. In instances of middle-aged debility in the male, sometime neurasthenia, sometime "failure of gonads," occasionally starkly "impotence," the help is positive and unquestionable (shade of Brown-Séquard!), and there is quoted evidence from M.R.C.S., L.M.S.S.A., M.D., F.R.C.S., and even F.R.C.P., that aid is to hand for those with shirking endocrines. The scientific undercurrent is obvious, and combination of endocrines is the keynote. "Orchitic extract" (why from *inflamed* testicles?) is skilfully blended with correlated glands. One cannot fail to be touched by the obvious concern with which one firm refers to the way in which the "stresses of the winter" act upon the medical man, and suggests that a combination of testicle and adrenal, at a specially reduced rate for the profession, clearly meets the indications of the case. (It may here be noted sympathetically that the expense and care involved in putting up these preparations preclude the supply of clinical samples, which in any case are unnecessary, as the efficacy of the preparation has been demonstrated beyond doubt. Nevertheless, that the cost question is adequately understood as a barrier is evidenced by the announcement that "owing to increased consumption it has been found possible to reduce the cost of the series of 'umpteen' injections necessary to obtain satisfactory clinical results from fifteen to twelve guineas.")

It is impossible to deal fully with the subject in the space available, but two other instances may be alluded to. There are, for example, parathyroid extracts. Their field of usefulness is widely indicated as ranging from paralysis agitans, chorea, and epilepsy, through colitis and duodenitis, to chilblains and varicose ulcers. There can again be no hesitation: there are favourable comments from Dr. M, from Dr. N there is enthusiastic support, and Dr. O has employed them with great benefit. Curiously, the preparation is an exsiccated gland for oral administration, by which route it is utterly inert! Finally, there are the baffling patients in whom our "practitioners even of long experience" cannot name any particular hormonic failure, but think there must be a "general failure of the endocrine functions." Even for such desperate cases of "Twilight of the Glands" there is hope, in a sort of *omnium gatherum* of endocrines, surely foreseen, as everything else, by the Bard.

> "Fillet of a fenny snake,
> Eye of newt and toe of frog,
> Wool of bat and tongue of dog,

[Desiccated pituitary, adrenal cortex, desiccated brain, exsiccated lymph gland]

> Adder's fork and blindworm's sting,
> Lizard's leg and howlet's wing,
> Scale of dragon, tooth of wolf"

(Exsiccated spinal cord, dried extract of testes, thyroid extract—put them all in!) This prescription, to be taken by the mouth, is found in the catalogue of a well-known firm.

The clinician may well cry "Halt," and say: "Insulin we know, thyroid we know, adrenaline and pituitrin we know, but what are these?" The time has surely arrived to ask for a clear evaluation of the usefulness and efficacy (if any) of the vast majority of endocrine productions of the present day, and, in particular, a positive guarantee of the fundamental "replacement power" of the preparation. Do, or can, the physiologists speak with a clear and unanimous voice? It appears necessary, further, to settle the question whether clinical dogmatism and hypothesis, allied with commercial zeal, have outrun the limits of ascertained facts.

If the results of a recent transatlantic investigation are to be credited, in that any activity of most glandular preparations is due to a "hotting-up" with thyroid, we might seem to be in for a severe "debunking" of existing endocrine therapy.—I am, etc.,

London, W.1, June 16th. C. JENNINGS MARSHALL.

Psychological Effect of Hysterectomy

SIR,—I was much interested in Dr. Winifred Coppard's letter (June 9th, p. 1048) on the psychological effects of hysterectomy. The following is a case which indicates at least the possibility of the operation being followed by no adverse effects of this nature.

The patient, a married nurse, a primipara, had a 10 lb. baby at the age of 36. Forceps were used. Afterwards she had a chronic pelvic discharge. Some three years later she had a three months' miscarriage, followed by severe menorrhagia, anaemia, backache, and chronic ill-health. The uterus was enlarged. Conservative treatment was tried without effect, and hysterectomy was advised and carried out. At operation a large uterus, with unhealthy mucous membrane, was found. One ovary was cystic and was removed, the other was left. The patient recovered quickly, and three months afterwards was not only running her house, but taking in and nursing convalescent patients. As regards intercourse, whereas before operation she had felt too ill and weary to be interested, afterwards she derived normal pleasure.

Now this patient was a member of a large family, and singularly well adjusted to life. Her whole history showed an adaptable disposition and an ability to tackle difficulties. Is not this the important factor? There are cases in plenty like Dr. Coppard's, where hysterectomy has been followed, not only by adverse psychological effects, but by definite mental breakdown; but so are there cases where the normal processes of puberty, childbirth, and the menopause have been followed by similar effects. Surely hysterectomy, like these latter, is only one of many precipitating causes which may be the last straw to a maladjusted personality. A knowledge of the psychological make-up of the patient should have its due place when deciding for or against operation.—I am, etc.,

Lincoln, June 11th. MARION GREAVES.

Hyperpiesia

SIR,—Dr. Graham Grant asks in your issue of June 16th for opinions as to whether alcohol is a contributory cause in hyperpiesia. I imagine that no one can give a dogmatic reply to his inquiry, but it is quite certain that hyperpiesia of severe degree is frequently encountered in persons who have never touched alcohol, and that extreme hyperpiesia is not obviously more common amongst alcoholics than amongst the remainder of the community.

Of the therapeutic substances which are of value in the treatment of the condition the barbiturates occupy an important position, and I am personally of opinion that their little cousin alcohol is not infrequently of some value also; in stating this I am well aware that careful judgement is necessary in order that the dose permitted may have a sedative effect, and not, by depressing the centres of control, merely encourage the patient to indiscretion.—I am, etc.,

London, W.1, June 15th. T. IZOD BENNETT.

"One-shot" Immunization Against Diphtheria

SIR,—I have read with much interest your leading article on diphtheria immunization in the *Journal* of June 16th (p. 1081). I have also read the M.R.C. report on active immunization against diphtheria, which prompted the appearance of your leader.

I note that you emphasize the possibilities of alum preparations of toxoids as potent diphtheria prophylactics for use in this country. This statement marks a definite advance in the attitude with which these powerful prophylactics are regarded by the medical profession, especially in view of the expression of opinion which recently appeared in a leading article in a contemporary British journal, to the effect that the preparation of such prophylactics had not yet reached a stage which would warrant their use on the general child population of Great Britain. It is usual in such commentaries to refer to the work of Saunders in Cork: in a series of 579 children who were immunized by three injections of alum toxoid four subcutaneous abscesses were encountered. The leading article which is referred to above suggested that such results would not be tolerated in this country. The chief factors which have delayed a more general use of alum preparations here are three: (*a*) anxiety regarding the occurrence of the general and local reactions which are liable to appear in certain individuals on the injection of high-value toxoids; (*b*) the fear of subcutaneous "cold" abscesses at the injection sites; and (*c*) general apathy regarding the superiority of the newer prophylactics over the much-tried T.A.M.

Eighteen months' experience of high-value toxoids has convinced me that, either alone or with added alum, they will entirely replace the older preparations. As a continuation of my work on these toxoids, a preliminary account of which was published in the *Lancet* (1934, i, 678), I have been carrying out observations on their efficiency when combined with alum ("alum-formol-toxoid," A.L.F.T.), and papers are in preparation dealing fully with these results. Since, however, your leading article has laid special emphasis on the possibility of inducing immunity by means of one injection, it seems desirable to publish a brief note with reference to a few cases which have been dealt with from this standpoint.

So far I have carried out immunization by means of a single dose of prophylactic only on small batches of children, and seventy-five children have been dealt with. It is possible to give preliminary results in the case of fifty-nine children, each of whom received only one dose of A.L.F.T.

(*a*) Of seventeen children of school age eight were Schick-negative four weeks after the injection, and twelve were negative six weeks after the injection. The percentages negative at four and six weeks were therefore 47.0 ± 8.2 and 70.6 ± 7.5 respectively.

(*b*) Of twenty-two children in another batch, nine were negative four weeks after the injection. This gives a percentage negative of 40.9 ± 7.1.

(*c*) Of twenty boys aged 15 to 18 years who resided in an institution seventeen were negative four weeks after the injection. In this case the percentage negative is 85.0 ± 5.4.

Although this preliminary series is small, the probable errors show that the results are statistically significant. Expressed in another way, we may say that in any series of children of school age in this locality, each of whom receives one dose of A.L.F.T., the expectation is that in four weeks about 40 to 50 per cent. will be negative, and by the sixth week this percentage will have increased to about 70. In older children we might expect about 85 per cent. to be negative in four weeks. (These results refer only to individuals who were found to have a definitely positive Schick test before the injection was given.)

So far as reactions are concerned, my experience is based not only on these seventy-five children, each of whom received only one injection, but also on a further series of 227 persons, each of whom received two or more injections. This makes 302 individuals in all. In each case preliminary Schick and Moloney tests were performed. Reactions of the toxoid type were encountered only in those cases in which this test strongly suggested that such reactions might follow the injection. None of these reactions was severe. More important perhaps is the fact that in no case has anything in the nature of subcutaneous abscess formation, as was found by Saunders with alum toxoid, been met with.

It should be remembered in assessing any results of single injections that a Schick test performed six weeks after the injection is equivalent, so far as the total time is concerned, to a similar test performed four weeks after the second injection where there is an interval of two weeks between the injections. These results strongly suggest that the efficiency of alum preparations is not merely an ideal of the future but is about to become an established fact.

In conclusion, may I point out that it is essential not to alienate the public. With these powerful prophylactics it is extremely desirable to avoid severe reactions. Although in some cases the Moloney test may be dispensed with when moderately powerful toxoids are used, the time is not yet ripe for immunization with alum preparations without its preliminary use. All the materials used in these investigations (both F.T. and A.L.F.T.) have been supplied through the courtesy of Dr. R. A. O'Brien of the Wellcome Research Laboratories.—I am, etc.,

Public Health Department, Leeds, June 16th. E. ASHWORTH UNDERWOOD.

Diphtheria Immunization

SIR,—In your very kind reference to our report on active immunization in your leader of June 16th it is stated that we argue "artificial immunization may increase the 'virulent carrier rate' and the occurrence of diphtheria among the inoculated." I assume "inoculated" is a slip of the pen for "*un*inoculated." Because the whole thesis was that artificial immunization increases the virulent carrier rate in the protected children, which in turn increases the case rate among the *un*protected members of the same community. I feel that attention should be drawn to this error, as the sentence, isolated from the context, would, as it stands, make a splendid piece of anti-vaccination propaganda.—I am, etc.,

R.N. Hospital, Chatham, June 16th. SHELDON F. DUDLEY.

*** Surgeon Captain Dudley is right. Owing to a typographical error inoculated was printed instead of uninoculated.—ED. *B.M.J.*

SIR,—In your leading article on diphtheria immunization you mention a scheme in "West Kensington." This scheme is not operative in West Kensington alone, but covers the whole of the Royal Borough of Kensington. The scheme was drawn up by the Kensington Division of the British Medical Association and the Council of the Royal Borough of Kensington.—I am, etc.,

J. COHEN,
London, W.2, June 16th. Honorary Secretary, Kensington Division.

Intracranial Injury in the Newborn

SIR,—Dr. Alan Moncrieff's valuable paper in the *Journal* of June 16th (p. 1068) will be welcomed by all who are concerned with the care of the newborn baby. The treatment suggested seems reasonable and is well worthy of thorough trial. But even if the results obtained with further experience do not support Dr. Moncrieff's optimism I would consider his paper important because it stresses a fundamental fact—namely, that the type of

intracranial trauma suffered by many infants should be described as cerebral congestion, oedema, and contusion rather than intracranial haemorrhage. I emphasized this point in 1922,[1] and it was again brought out by J. N. Cruickshank in the report on his extensive pathological investigations. My clinical experience in the Liverpool Maternity Hospital during the past fourteen years supports the view that the intracranial condition in many damaged infants is one which, while full of danger to life during forty-eight to seventy-two hours after birth, may resolve after this period has been successfully passed, and leave no permanent physical or mental disability.

We have got beyond the stage of believing that the death of a damaged infant is always a merciful release, and we are fully justified in employing every line of treatment likely to help the baby to survive the early period of danger, even though we may not be able to make an exact differential diagnosis between intracranial haemorrhage on the one hand, and cerebral congestion, oedema, and contusion on the other. I hope that Dr. Moncrieff's suggestion will receive trial in many places, and that the results will be reported.—I am, etc.,

Liverpool, June 18th. NORMAN B. CAPON.

Criticism of Ante-Natal Work

SIR,—Mr. A. J. Wrigley's recent article on ante-natal care (*Journal*, May 19th, p. 891) is a timely reminder that its end-results, as judged by maternity statistics, demand a kind of stock-taking review. The system of preventive medicine which we call ante-natal care has now been in operation long enough to enable us to form an opinion of its value in preventing deaths and disability due to childbearing, and it is therefore right that we should stop to consider whether a method which must be inherently sound has or has not produced the results originally expected. Mr. Wrigley's article of criticism suggests that there has been a partial failure in the practical application of the method, and subsequent correspondence has shown that considerable interest has been aroused. It is fortunate that the Section of Obstetrics and Gynaecology at the forthcoming meeting of the British Medical Association is providing a session for the debate of so important a matter.

There is no doubt that the results, as set forth by Mr. Wrigley, must set us thinking hard. It is inevitable that those of us who are engaged in the teaching and practice of obstetrics regard ante-natal care as a vitally important part of our work, because it is obvious that the detection of abnormal conditions and their treatment, where possible, should necessarily lead to improvement in the end-results. And therefore, after so much energy and enthusiasm spent in teaching and writing, we must confess to something of surprise and disappointment when confronted with the figures of Mr. Wrigley's paper. Discussion of the details of diagnosis and treatment are, of course, inevitable, but before descending to this it would be well to consider whether the general teaching of students, the attitude of mind towards certain of the supposed abnormalities of pregnancy, the public administration of the system, and its partial adoption by individual practitioners, are each or all responsible for the failure to obtain the results we hoped for.

As the original enthusiasts and present teachers of the young student and post-graduates the obstetricians must necessarily bear the chief criticism. The other participants may rightly point to us and say that they are only doing what we have taught. We must examine ourselves, and ask ourselves whether, for example, it is really proper to regard the " high head " as a common indication of contracted pelvis and therefore of induction of labour or Caesarean section. Public authorities might reconsider the capacity of a whole- or part-time ante-natal officer, who sees little or nothing of actual labour, to offer opinions on the prognosis of labour in a given case of doubt. All of us may ask ourselves if we have not elaborated a pseudo-pathology of pregnancy by our emphasis of details which have no real significance, so that our attitude of mind is biased in favour of an actually unnecessary interference. And, finally, is ante-natal care applied to the vast majority of pregnant women by individual practitioners who accept the responsibility of conducting labour? There is evidence published in recent departmental reports that many women have no supervision, and many more only a perfunctory attendance, which is of no real value whatever.

I feel that in this discussion it is useless to descend to recriminations, for all of us who practise and administer the ante-natal system are open to criticism for the partial failure that is now admitted by all who are not handicapped by an oblique vision of the problem. I am hoping that the Bournemouth meeting will yield criticism which is constructive, and will pave the way to a second phase of ante-natal care which will be based upon a better understanding of the pathology of pregnancy.—I am, etc.,

London, W.1, June 18th. ALECK BOURNE.

[1] *Journ. Obstet. and Gynaecol. British Empire*, 1922, xxix, 572.

Prevention of Puerperal Sepsis

SIR,—As a general practitioner I was much interested in Dr. W. H. F. Oxley's paper on " Prevention of Puerperal Sepsis " (June 9th, p. 1017), and agree with it all. I have two suggestions to make with regard to it. He is very keen on everything being left to nature as far as possible, there being very little vaginal examination. I have made inquiries at several hospitals, and find that students are always told to guide the forceps with the other hand in the vagina. This means an unnecessary insertion of a hand in the vagina. When it is known that the head is presenting, and that the os is dilated, it requires no force whatever to put on the forceps. They *drop* into place if handled properly. If they do not the operator is not skilled enough to be practising midwifery.

Dr. Oxley records twenty cases of pyrexia after abnormal confinements. In seven of them the hand was introduced into the uterus during or after the third stage of labour, in most cases due to a long-retained placenta or to unnecessary continual massage of the uterus. I have looked at all the books on midwifery which were found for me in the library of the B.M.A. I wanted to find out the treatment of the umbilical cord, and in all but one it was stated that it had to be tied in two places and cut in between. In *A Short Practice of Midwifery* (Jellett) it is stated:

> " It has often been suggested that the omission of the ligature on the placental side of the cord, by allowing the blood of the placenta to escape, facilitates the mechanism of the third stage of labour. If this is really so, such omission is advisable. If it is not, I prefer a second ligature."

Of course, it must not be done if there is a twin to follow.

For years I have not tied the placental side, but I do not know from whom I learned it. If those who wrote the book referred to had troubled to think about it they would have advised leaving the placental side unligatured. I must own it requires some imagination to reckon what happens in the placenta when the blood runs out of it. It certainly makes it smaller, and so the uterus has less to turn out. Also, I think, it must separate more easily from the uterus. None of the other mammalia in nature tie their umbilical cords! If it were always left free I believe we would have fewer cases of puerperal sepsis.—I am, etc.,

London, W.10, June 14th. NORMAN H. JOY.

SIR,—After reading countless articles on the prevention of puerperal sepsis in general practice, it is interesting and refreshing to read Dr. W. H. F. Oxley's lecture in your issue of June 9th. It is eminently helpful to the general practitioner. He describes a technique uncomplicated and easily carried out, instead of the masked, gloved, and gowned spectre which the bacteriologist would have us present to the already nervous young girl about to go through the trials of her first labour. He draws attention to the part played by the forceps in the causation of puerperal sepsis. This state of affairs is bound to continue so long as the forceps is regarded by many as a blessed instrument for the saving of time, and enabling the doctor to keep his appointments, social and otherwise.

The question of retained placenta is mentioned, the current treatment of which results so often in sepsis. The method described by Majon in 1826, by Jarcho in 1928, and later by Mr. Currie of Leeds in 1933, seems worthy of more general adoption. This consists in the injection of the umbilical vein with sterile saline under pressure. In Mr. Currie's series of fifty cases he showed that the method was simple, free from danger, and highly successful. It would be interesting to learn the results of this treatment in a large series of cases in hospital and general practice.—I am, etc.,

R. D. B. WRIGHT, M.B., Ch.B.

Hornsea, East Yorks, June 15th.

Injuries of the Knee-joint

SIR,—I was surprised to read Dr. Stewart's criticism, in the *Journal* of May 5th (p. 824), of Mr. T. P. McMurray's masterly exposition of this subject (April 21st, p. 709). It seems strange that a belief should still exist that injury to the semilunar cartilages ever occurs in other than the flexed position of the joint. I have always thought that this bogy had been finally slain in a paper read in (I think) 1911 by my old chief, the late Mr. A. M. Martin of Newcastle-on-Tyne, than whom few, if any, had greater experience of these injuries. There is nothing in Dr. Stewart's description of his cases to prove that the injury occurred in extension: the presence of locking in extension—he does not say full extension—is the best proof of its having occurred in flexion. In the absence of lateral mobility in a fully extended joint, injury to a cartilage is produced by the continuance of a force which has already caused severe damage to other structures.

I have radiographs of a complete external dislocation of the knee-joint, where the patient regained full function under the conservative treatment so ably advocated by Mr. McMurray. The dislocation I reduced with surprising ease. Both crucial and internal lateral ligaments were completely torn through. Mr. Martin examined the case with a view to suture of the ligaments, and decided against intervention. The limb was put up in poroplastic just short of extension, with the excellent result already mentioned.—I am, etc.,

G. STEWART WOODMAN, F.R.C.S.ED.
Chief Surgical Specialist to the Government of Iraq.

Baghdad, June 7th.

Prescription of Thyroid

SIR,—I would not venture to trespass on your space if I were not convinced of the inaccuracy of part of the statement on page 1039 of your issue of June 9th with the implication of ignorance on the part of practitioners of medicine in prescribing this substance (tab. thyroideum *B. P.*): "Several firms, especially in the North of England, are now manufacturing twenty times as many . . . 5-grain tablets . . . as they did before." This is certainly not true in our own case, and the predominant use of the lower range of dose is indicated by the fact that during the past year the total number of tablets made in the smaller doses—grains ¼, ½, 1, 1½, 2, and 3—outnumbered the 5-grain size by 27 to 1, and the strengths for the most part commonly asked for were the ¼, ½, 1, and 2 grain.

Further, for a very great many years it has been the practice of this firm to recommend to medical men the desirability of ordering thyroid in terms of dried tissue. In 1923 I read a paper before a branch of the Pharmaceutical Society on "Ductless Glands and their Relation to Practical Medicine," in which I again drew attention to this point in the following words: "I should like to emphasize once more the fact that it would be an immense advantage if prescribers would forget altogether the relationship between fresh gland and dried gland and free their prescriptions from all ambiguity by stating their doses clearly in terms of thyroideum siccum."

The figures given above would seem to show that medical men drawing their supplies from us do not feel the difficulty set forth in your note, and we believe that if, in the South, the statement of dosage had been long ago confined to terms of the dried gland no such confusion in prescribing, as is said to exist, could possibly have arisen.—I am, etc.,

WILLIAM MARTIN, M.A., M.D.
Director, Brady and Martin, Ltd.

Newcastle-on-Tyne, June 12th.

SIR,—With reference to your article on the prescription of thyroid in the *British Medical Journal* of June 9th, it is a matter of great importance that this question of the relationship between dry thyroid and fresh thyroid gland should be made absolutely clear, because there is no doubt, as you say, that 5-grain tablets of dry thyroid are being frequently prescribed when fresh thyroid gland is intended. At the same time, there is one point in your article which is not quite correct. You state that the *B.P.* dry thyroid is five times as strong as the fresh gland preparation. The *B.P.* preparation is standardized to contain 0.1 per cent. of iodine in combination as thyroxine. The relationship to the fresh gland therefore depends entirely on the original iodine content of the gland from which the *B.P.* preparation is made, and may vary within quite wide limits. Usually one part of the *B.P.* dry thyroid is equivalent to much less than five parts of fresh gland, the average being probably about three parts. This makes a dose of 5 grains of *B.P.* dry thyroid equivalent to about 15 grains of the fresh gland.—I am, etc.,

NORMAN EVERS, B.Sc., F.I.C.

Allen and Hanburys Ltd., Bethnal Green, E.2, June 18th.

Diverticulitis

SIR,—I cannot agree with your correspondent Mr. J. L. Joyce (*Journal*, June 16th) that a temporary caecostomy is an adequate operation in cases of acute diverticulitis, where there is a threat of such complications as obstruction, perforation, or colo-vesical fistula. While caecostomy may enable the patient to get over the immediate crisis, the latter is almost certain to recur very shortly. If the object of the caecostomy is to enable the contents of the colon to be kept liquid, an appendicostomy is a more suitable procedure, but these complications of acute diverticulitis are very serious conditions, and a transverse colostomy, which completely prevents the faecal contents of the colon from reaching the damaged area is, in my opinion, the only procedure which is likely to prevent such complications. A section of colon which has been so seriously damaged by acute diverticulitis that it is giving evidence of causing obstruction, or of being about

to perforate, is most unlikely to recover sufficiently in three weeks to resume its normal function.

In a great many cases, unless some form of operation to deal directly with the damaged bowel can be carried out, the colostomy will have to be permanent. After all, there is no form of medical treatment that can improve the anatomical abnormality produced by the diverticula, nor can diverticula, once formed, be made to disappear. All that medical treatment can do is to so alter the local conditions that the inflammatory manifestations have a chance of subsiding. The ideal treatment is a temporary transverse colostomy, followed, when all the inflammation has subsided, by a resection of the affected portion of bowel. Unfortunately, it is not very often that this is possible, and in many cases the patient has to be satisfied with a permanent colostomy, which, after all, is not too severe a price to pay for prolongation of life and absence of pain.—I am, etc.,

London, W.1, June 15th. J. P. LOCKHART-MUMMERY.

Ephedrine in Asthma

SIR,—The omission of a hyphen in the last word of my letter (June 16th, p. 1097) conveys a meaning which is the antithesis of that intended. The sentence should read: "In conclusion, I should like to mention that the best sympathetic stimulant is cold, which can generally be obtained by good ventilation and under-clothing."

The matter is of considerable importance, as I am certain that over-clothing is an important aetiological factor in the causation of asthma, particularly in children. This is very well seen in measles convalescents. Bronchitis in these cases generally occurs when the heat-regulating mechanism is unduly stressed by excessive clothing or an overheated sickroom. If one garment only is permitted, and the room temperature kept about 60° F., bronchitis is an extremely rare complication.

Reduction in clothing is necessary when thyroid-ephedrine treatment is used, as these drugs in combination appear to cause an increase in the metabolic rate, and I have known pyrexia to occur when heat loss has been restricted.—I am, etc.,

Bradford, June 16th. H. S. RUSSELL, M.D.

⁂ We cannot find any authority, in the *Oxford English Dictionary* or elsewhere, for the use of a hyphen to distinguish between "underclothing" (the act of wearing few or insufficient garments) and "under-clothing" (garments worn below the upper or outer clothing); or for a corresponding distinction between the two senses of "overclothing." But we willingly insert the two hyphens in order to emphasize Dr. Russell's point. Incidentally we might remark that during last week-end all underclothing was overclothing.—ED., *B.M.J.*

Ethyl Chloride Analgesia in Minor Surgery

SIR,—The question of time is an important one to the practitioner, and a simple, safe, rapid, and efficient analgesic would supply a long-felt want. For example, the cleansing of a wound, removal of a nail, extraction of a tooth, incision of a simple abscess or whitlow, or extraction of a splinter is often too petty to warrant the risk of a general anaesthetic, the bother of gas, or the time necessary to produce local anaesthesia. In consequence, the patient is often expected to put up with the pain.

A series of over two hundred cases has encouraged me to report on the practical utility of ethyl chloride analgesia. The dangers of ethyl chloride are well known. It is not my intention to deny or minimize those dangers, but to point out the enormous difference between the use of ethyl chloride as an anaesthetic and as an analgesic.

It may not be well known that all general anaesthetics produce an analgesic effect preliminary to and distinct from actual anaesthesia and relaxation. The former effect can be isolated from the latter and made use of, and is best obtained with a pleasant and non-irritating substance such as ethyl chloride. The method of administration is as follows:

Spray or drip ethyl chloride on a thin (eight-inch) sheet of cotton-wool, about four inches square, held on the palm of the hand. The area sprayed should be large enough to cover the nostrils and open mouth of the patient. Cease spraying when the moisture trickles through to the palm—this requires five to seven cubic centimetres. Place the moistened wool over the open mouth and nose of the patient, who may be sitting or recumbent. Tell him to blow ten or twelve times forcibly through the mouth fairly rapidly, explaining that at the end of that time he will be in a state to appreciate pressure but not pain. At the tenth breath do what is necessary as quickly as possible. The analgesia will last ten to thirty seconds, which is usually ample if everything has been got ready beforehand. If the operation is calculated to take about ten seconds only the cotton-wool should be removed at the tenth breath, otherwise it may be left on the face without danger, during the performance of the operation. As consciousness is retained the patient will, for example, open his mouth on being so requested, and will keep quite still while one or more teeth are being extracted.

This method of analgesia was introduced to me by Dr. Peake, a South African dentist, who has extracted several thousands of teeth by its aid. I have his assurance that he has never seen any ill effects from its use. My own more limited experience has been similar. The ethyl chloride is breathed through a thin layer of cotton-wool, and the administration is therefore as "open" as it could possibly be. Consciousness is always retained in some measure—it is impossible to anaesthetize anyone in fifteen or sixteen seconds. The subjective sensations vary. I have administered the analgesia to myself for a dental extraction, and suffered no pain whatsoever, experiencing dizziness and fullness in the head, and pressure on the jaw. In four or five seconds the patient is himself again—there are no after-effects, such as headache, nausea, or vomiting. In this respect I have found it not unsatisfactory to administer analgesia on a full stomach. I have repeated the analgesia on one occasion after a few minutes' pause with no ill effect, but doubt the advisability.—I am, etc.,

General Hospital, Northampton, May 30th. M. AMOILS, M.B., B.CH.

The Medical Charities

SIR,—As honorary secretary of the Royal Medical Benevolent Fund I feel that a reply to Dr. Arnold Gregory's letter in your issue of May 26th on this subject is desirable. All those who work for medical charities will be in sympathy with any attempt to improve the position, and I sympathize with his desire that the facts should be faced clearly and boldly, but his letter contains suggestions which might mislead some and possibly may have the effect of alienating sympathy among those who might deduce from his letter that the medical charities are unsatisfactorily administered.

If much ignorance still exists regarding the charities the fault cannot be laid at the door of the various organizations concerned: for no Press could have given greater or more constant publicity to the charities than the medical press has done for many years. The widespread organizations working under the Charities Committee of the B.M.A., under the administration of this Fund and of Epsom College by honorary local secretaries, have done all that is possible to bring our needs before the whole medical profession, and if the response is inadequate it is due to the apathy of the profession.

Dr. Gregory's suggestion for the formation of a capital fund of £25,000 surely implies that he is not cognizant of the magnitude of the work already being carried out. It will suffice to state that the invested capital of this Fund alone is £160,267, that the annual income derived from subscriptions is £11,856, and that the total amount distributed to beneficiaries in 1933 was £18,900.

In agreement with Dr. Henry Robinson, I urge concentration upon increasing annual subscriptions and legacies rather than any special form of intensive short-lived campaign. Success depends upon the good will of the profession and in the belief and knowledge that the charities are doing really useful work. We seek the interest of men and women who are willing to act as honorary local secretaries, as it is chiefly by personal persuasion that the subscription list can be improved.

I must reply to one criticism which appears in Dr. Gregory's letter—that the grants are pitifully meagre—since it is frequently used by others, often as an excuse for refusing to subscribe, on the grounds that a grant of £26 is so inadequate that such a fund is not worthy of support. While it is true that the Fund limits its grants to £40 per annum to a medical practitioner and £26 per annum to dependants, it is quite fallacious to suggest that our help ends there. Applicants in great poverty are advised and assisted in their applications to other medical charities and to non-medical charities. Our Ladies' Guild, an auxiliary of the Fund, assists not only with grants but with food, coal, and clothing and with education, as these few examples show.

Widow, aged 66, is in receipt of Fund grant, £26; Guild, £12; Epsom Pension, £40. Total from medical charities, £78, in addition to outside charity, £10, and very small personal income.

Widow, aged 53, with three children; earning what she can by letting rooms; is assisted by medical charities, Fund and Guild, to the extent of £66 per annum.

Daughter, aged 60, with a private income of £12; is in receipt of medical charity, Fund and Guild, £65.

Widow, aged 67; some help from relations; medical charity, Fund and Epsom College, £66 per annum.

Widow, aged 74, in receipt of old age pension; medical charities, Fund and Epsom College, £71 per annum.

It should be appreciated that no applicant in great poverty is ever left to fend for herself on £26 per annum, for this grant does not reveal the full extent of the assistance which the Fund arranges; and, further, no deserving applicant has ever been refused help by the Fund, although in a few isolated cases applications of no great urgency may have been postponed to a future meeting.

It is frequently said that the percentage of medical practitioners who subscribe to medical charities is distressingly small, but it is overlooked that a very large number subscribe indirectly through a levy by their area Panel Committees: and that, in addition to the well-known central charitable organizations, some counties and districts have a medical charity of their own, the existence of which is little known to the profession in general.

If all these organizations are considered together the medical profession will be found to suffer nothing by comparison with the charitable records of other comparable professions in this country.

The need is undoubtedly great and is likely to increase. The immediate need for which I appeal is an increase in the number of annual subscribers, and I appeal to every subscriber to make a special effort this year to enrol at least one new subscriber, and further I appeal for offers of volunteers to act as honorary local secretaries.

The ultimate object for which we are all working is the achievement of such a financial position as would enable us to meet all our applications in that generous manner which we all desire. That object will, however, require in the future, amongst other things, a much closer co-ordination between all medical charities, both collecting and distributing. These problems are outside the scope of this letter, which is intended to eradicate a possible wrong impression which Dr. Gregory's letter may have left.

The Committee of Management of the Royal Medical Benevolent Fund is only too aware that there is room for great expansion, but that depends entirely on money, but, with the present resources at their disposal, I submit that the work of the medical charities, of whose working I have intimate inside knowledge, is carried out not only efficiently but with that courtesy and kindliness one is accustomed to associate with our profession.—I am, etc.,

R. M. HANDFIELD-JONES,
Honorary Secretary, Royal Medical Benevolent Fund.

11, Chandos Street, Cavendish Square, W.1, June 12th.

SIR,—The financial position of the medical charities has always been a disgrace to the profession. I am surprised that so little notice has been taken of Dr. Gregory's letter (May 26th, p. 962), and take it as evidence that the consciences of the individual members of the profession have not yet been awakened to the fact that it is the duty of every member to help his fellow members and their needy dependants in old age and infirmity. I do not approve of some of the methods of raising money, such as whist drives, lotteries, etc. From my limited experience of collecting I am sure that the personal canvass is the best method. I understand that commercial travellers have a box on the table at every ordinary dinner, and that a large amount is collected in this way. I would suggest that at every medical meeting there should be a box on the table for donations to the Charities Committee of the British Medical Association.

I had the curiosity to read the report of the Royal Medical Benevolent Fund, which has just been published, and count the number of subscribers from this town. There are about thirty-six, and they subscribed under forty guineas. In addition, the Panel Committee gave a donation of twenty-five guineas and the Association collected twenty-five guineas and tenpence.

I suppose there are about five hundred practitioners in Birmingham. There are over 450 panel practitioners, who receive over £180,000 between them. In addition, there are non-panel practitioners, physicians and surgeons, and specialists. Between them all under a hundred pounds was subscribed last year to the Royal Medical Benevolent Fund. Surely there is room here for a personal canvass.—I am, etc.,

Birmingham, June 17th. ROBERT ANDERSON, M.D.

The Services

HONORARY SURGEON TO THE KING

In the *London Gazette* of June 15th the War Office announces that Major-General H. R. Nutt, M.D., F.R.C.S., Indian Medical Service, V.H.S., is appointed Honorary Surgeon to the King, February 28th, 1934, vice Major-General J. D. Graham, C.B., C.I.E., M.B., Indian Medical Service (ret.).

SHORT-SERVICE COMMISSIONS IN THE R.A.M.C.

The following candidates who presented themselves in June, 1934, for short-service commissions have been granted commissions as lieutenants on probation in the Royal Army Medical Corps:

W. M. E. Anderson, M.B., B.Ch., H. B. Wright, M.B., B.Ch., J. Boyle, L.R.C.P., L.R.C.S., R. H. Foster, B.Ch.Camb., J. S. Ruddell, M.B., B.Ch., A. G. D. Whyte, M.B., B.Ch., A. L. Pennefather, M.B., B.Ch., C. G. O'Driscoll, M.B., B.Ch., D. T. Swift, M.B., Ch.B., F. E. Buckland, M.R.C.S., L.R.C.P., A. MacLennan, M.B., Ch.B., J. H. J. Crosse, L.R.C.P., M.R.C.S., J. Morgan, M.B., Ch.B., R. A. Stephen, M.D., E. H. P. Lassen, M.R.C.S., L.R.C.P., R. S. Vine, L.R.C.P., M.R.C.S., I. Buchanan, M.B., Ch.B., J. E. Jameson, M.R.C.S., L.R.C.P., N. W. Allen, M.R.C.S., L.R.C.P.

Medico-Legal

BUSINESS RELATIONS BETWEEN DOCTORS*

PARTNERSHIPS

If partners are well matched and work together, their combined strength is a great deal more than the sum of their individual resources. If partners are ill matched, they had far better separate. Many partnerships are wrecked by jealousy, but perhaps more of them founder because the partners never were at any time temperamentally fitted to work together. The bed-rock of a partnership is mutual good will, and intending partners should consider most seriously and at some length whether they will probably get on well enough with each other to work together for many years. If they have any doubt they should not start. Possible causes of disagreement should be frankly faced, discussed, and guarded against. Experience shows that most of the difficulties of working in partnership can be overcome if partners behave in the right way from the start. The best advice that can be given to an intending partner is to consult the secretary of his defence society or of the B.M.A. These officers are experts in medical business relationships, and can also recommend solicitors and accountants in whom the doctor can place every confidence.

A fruitful source of later discord is the discovery by the new partner that his share is not worth what he thought it was. His disappointment is very likely to lead him to express doubts of his partner's good faith, and a breach thus caused may easily widen into a rupture. The purchase of a share is governed by the same considerations as the purchase of a whole practice, which will be dealt with fully in a later section. The chief safeguards are thorough investigation of the accounts by an accountant who is expert in medical work, and careful local inquiry by an experienced medical agent.

When the intending partners have decided that they can exclude every likely cause of disagreement, they should approach a firm of solicitors with experience in medical work and have the agreement properly drawn up. They should not attempt to work together until this has been done. Sometimes partners let years go by before drafting, let alone signing, the agreement. If any disagreement arises the position is very complicated and disastrous litigation may develop.

The following experience[1] shows how badly a medical man may fare through beginning to work in partnership before the legal agreement is drawn up and signed.

There were two partners, A and B. B retired and X, another practitioner, agreed to buy, subject to certain conditions to which A agreed. No mention was made of any preliminary assistantship, and X understood that A had accepted him as a partner. B was about to undergo an operation, and was to arrange his affairs before he left the town, so X paid up the bulk of the purchase money and signed an agreement to take over B's house. X started work with A as a partner and worked for five weeks. He was introduced to A's patients as A's partner. He went on to the panel and his name was substituted for B's on the cards. A and X opened a common banking account, and steps were taken for X to take over B's share of the lease of a common surgery. After discussion with A, X caused to be printed 2,000 copies of a new joint account form, and A bought and paid for X's plate with both names on. X called on all the doctors in the town as A's new partner.

After five weeks, with A's consent, X went to London to make arrangements for moving his furniture in, and paid a locumtenent during his absence. On arrival in London he received a letter from A saying that he thought it would be a mistake to proceed further with the partnership, and that B had acted hurriedly. At the same time X learned that B was dangerously ill after the operation. X recovered his purchase money from B, but had to look elsewhere for a practice. He had to tell all his friends that the arrangement with A had fallen through; he had received a number of introductions to people in A's town, and he felt that he had suffered considerable moral damage, apart from out-of-pocket expenses and loss.

It is not at all improbable, however, that a court of equity would consider that A, by his conduct, had induced X to regard himself as A's partner, and that he would be liable for any damage to X caused by his subsequent withdrawal.

THE PARTNERSHIP AGREEMENT

Although the drafting of the partnership articles should be entrusted to a solicitor with special experience in medical work, it is desirable that intending partners should have a good idea of what the articles should contain. Many of the conditions of a properly drafted agreement are, at first sight, unnecessary and even unintelligible; to appreciate them the doctor must know their history and the results of omitting them in the past. Barnard and Stocker's specimen form of articles, with notes, are the best if not the only published source of this information. Briefly,[2] the agreement should define: the duration; the terms on which the in-coming partner shall acquire and increase his share; the mutual rights and duties of the partnership (the division of labour); the partnership property and expenses; the fees to be charged; the terms of dissolution and the restrictive covenants by which an outgoing partner shall bind himself not to compete with the remaining partners; and the mechanism for settling disputes. Provision should be made for the keeping of accounts, the division of profits, holidays, and the absence or incapacity of a partner.

Partnerships nearly always originate in the purchase by a junior of a share in the practice of a senior practitioner. The premium is usually paid in a lump sum, before the partners start to work together. There are good reasons for this custom. If the junior agrees to pay instalments and fails to pay them regularly, the senior will naturally be discontented and friction will arise. If he does pay them regularly, he may have so little money left that he cannot keep up a proper appearance or meet his tradesmen's bills, and the credit of the practice will suffer. As he gets no share of the money owing by patients at the time the partnership begins, he will not receive his full share of the profits for a considerable time. The same objection applies to admitting a partner who has borrowed money to pay his premium, unless he has borrowed it from a recognized society under its scheme for assisting young practitioners to start in practice.

DURATION OF PARTNERSHIP

In fixing the duration of the partnership the partners have to remember that the fundamental object of all their business arrangements with each other must be to preserve the goodwill and connexion of the practice, so that when the partnership is dissolved by death or some other cause, each partner shall be able to realize the proper value of his share. The risk of partners quarrelling and being unable to carry on together is always present, and it is essential that if this happens any partner shall be able to withdraw with as little damage to the practice as possible. One method is to give either partner the option of dissolving at certain fixed dates, such as the seventh, fourteenth, and twenty-first years, and to allow both to continue to practise in the district. The disadvantage of this method is that it holds out an obvious inducement to each partner to compete with the other to get as many of the patients as possible into his own hands, in order that when the next date comes round he shall find it worth his while to dissolve. Moreover, as each partner will be faced with a competitor on dissolution, his interest will not be worth nearly its proper value.

The agreement recommended by Barnard and Stocker is therefore that the partnership should continue for the joint lives of the partners, but that either shall be free to sell his interest at any time after the first few years, on giving six months' notice, the other binding himself to purchase it. Exactly how many years shall be allowed before either is free to sell will depend on the nature of the practice. The object is to give the junior a good chance of establishing himself. The outgoing partner covenants to give every possible assistance in the way of introducing his ex-partner to his patients and obtaining for him the appointments which he is relinquishing.

* The first of these articles, by a legal correspondent, appeared in the *British Medical Journal* of June 9th, 1934 (p. 1053).

[1] *Lancet*, 1926, ii, 150.

[2] *The Conduct of Medical Practice*, p. 50.

For details of this form of agreement readers are recommended to consult these authors' valuable textbook. Some authorities suggest that the remaining partner shall have the option of refusing to purchase, but this arrangement gives him such a stranglehold over the practice that a junior will be well advised not to consent to it. The position has, in practice, caused endless trouble.

MONEY MATTERS

The newcomer often agrees to pay a sum fixed by a competent valuer for his share of the surgery furniture, drugs, and appliances. This clause is another fruitful source of trouble, because the newcomer is apt to assume, not unnaturally, that the surgery furniture includes everything he saw in the surgery when he was first shown over it, while the senior may consider that many of the most desirable pictures, chairs, and rugs are his own property and remove them before valuation. The partners should agree on a schedule of furniture for the use of the valuer. Each partner usually provides his own motor car, but if the junior is only purchasing a small share the expense might be too much for him, and it would be better for him to contribute a fixed amount to the upkeep of the senior's cars in return for their use. It is usual for each to have his own surgical instruments.

The agreement will provide that the working expenses of the partnership, such as rent, repairs, supplies, and service, shall be paid out of the receipts, possibly from a joint banking account. The shares of the partners are defined, and each agrees to employ himself diligently in the practice and to do no other work, except, perhaps, look after a resident patient, and to accept or resign no appointment without the consent of the other partner. Although it may, at first sight, seem fair that if the senior is already a medical officer of health or a coroner he should keep the salary for himself, yet he is doing the work in partnership time, during which his junior partner is working to make profits for both.

If the junior partner comes in with a smaller share than half, he will probably want to reserve the right of buying up to one-half as soon as possible. The senior will usually want to put off the increase as long as he can, and can justly argue that the junior will not be earning half the profits for a considerable time. Barnard and Stocker suggest that the junior should be given the option of increasing his share to one-half at any time after the number of years demanded by the senior, and sooner if, at the end of any year, the accounts show that he has earned in it as much as the senior. The purchase price should be based on the original valuation and not upon the receipts immediately before the purchase, for any increase in the receipts may well be due to the exertions of the junior as much as of the senior. Each partner usually agrees to provide a competent substitute if he absents himself or is incapacitated from doing his work.

DISSOLVING THE PARTNERSHIP

Power should be given to either partner to dissolve if the other is incapacitated for a stated time, or becomes lunatic, or breaks the agreement, or damages the interests of the partnership by misconduct, or is removed from the *Medical Register*. If a partner dissolves on any of these grounds, or the partnership is terminated by a partner allowing his share to be charged with debt or being bankrupt, the defaulting partner should be considered, for the purposes of the agreement, to have died on the date of dissolution. If the partnership is ended by misconduct or breach of agreement, the other partner is generally released from any obligation to buy the offender's share, but it is better to make some sort of positive arrangement as well. The ordinary form of articles does not provide for the senior partner losing patience with the partnership, throwing over the agreement altogether, reverting as much as possible to the state of things which existed before the junior man came, and defying him to do what he likes. Such things have been known to happen. The junior can then either dissolve the partnership, in which case the senior becomes a competitor and the junior's interest in the practice is almost worthless ; or he can buy the senior out, which means that he will have to pay a large sum (which he may not be able to raise) for a practice to which he has not been properly introduced. Neither remedy is at all attractive. One possible safeguard is to frame the covenant in restraint of future practice (about which more will be said in a later article, and the object of which is to prevent a partner from selling his share and then continuing to practise next door) so that if the partnership is ended by misconduct or breach of agreement the offender shall not be able to remain in competition with his former partner. A better precaution, and one advised by the solicitors to a large defence society, is to provide that the aggrieved partner may buy the share of the offender for half the sum which he would have had to pay if his partner had died.

The agreement should lay down the price at which the survivor shall or may buy the share of a partner who dies, at various stated times after the beginning of the partnership. The authors advise that the survivor should be bound to buy. He should have easy terms of payment, but the representatives of the deceased must have adequate security, and if he can neither pay nor give good security, he must take another partner who will provide the necessary capital. If he is given the option of buying or not, he is in a position to cause the representatives of his late partner considerable trouble by obstructing the sale of their interest without actually refusing a new partner. The agreement should also provide for the taking of the final general account, and contain a clause restricting an outgoing partner from practising within a stated number of miles from the place of the partnership. It may end with a provision that any dispute shall be referred for decision to an arbitrator.

Obituary

HENRY WATSON SMITH, O.B.E., M.D.

Medical Director, Lebanon Hospital for Mental Diseases

By the sudden death in England, on June 12th, of Dr. H. Watson Smith the Near East has lost one of its very few mental specialists and the Lebanese Republic an outstanding personality. In his twenty-five years as medical director he had built up the Lebanon Hospital for Mental Diseases at Asfuriyeh, near Beirut, and at the recent annual meeting of subscribers in London the Syrian head master of a large school near Jerusalem expressed the opinion that this voluntary international hospital was one of the two institutions in Syria and Palestine which stood head and shoulders above all others. So great has been its prestige under Dr. Watson Smith's direction that sufferers from mental diseases travel from Egypt, Iraq, Turkey, and Persia to be under his care. In the absence of any system of certification, cases are received in the early stages, and the results of treatment have been remarkable.

Henry Watson Smith was born near Aberdeen on February 6th, 1879, of Scottish parents. Having entered as a medical student at the University of Aberdeen he won several bursaries and gold medals, and graduated M.B., Ch.B. with honours in 1901. After holding house appointments at Aberdeen he was house-surgeon at the West Suffolk General Hospital, Bury St. Edmunds, for two years, then for eighteen months at Peckham House, London, and for the following three years second assistant medical officer at the Durham County Mental Hospital. It was on the strong recommendation of the last-named body that the London Committee chose him as the future head of its hospital on Mount Lebanon, and he took up his official duties in February, 1909, having first obtained the Turkish medical degree at Constantinople, since Syria was at that time under the Turks. Subsequently he added to his knowledge of French a thorough working knowledge of Arabic. His thesis on the aetiology and pathology of general paralysis of the insane gained him the M.D.Aberd. in 1912, but beyond

that he wrote little, for the time he could spare from the work of the hospital was devoted to teaching medical students at the (American) University of Beirut. He was appointed professor of psychiatry and neurology in 1926, and thenceforward held regular classes, both in Beirut and at the hospital six miles away. This teaching side of his work was the more important, since thirty-five years ago, when the hospital was founded, any care for mental sufferers in Syria was non-existent, beyond the cruel rites of exorcism practised by religious fanatics. The change of attitude in this matter in a generation has been revolutionary, and, apart from the actual results of treatment, the ideas for which Asfuriyeh has stood, and the example which it has set of scientific and humanitarian ways of thought and of treatment, have lifted it to a unique place in the country. In this result the personality of the director played a great part. Dr. Watson Smith is said to have been the only British subject allowed to remain in Syria during the war, and had it not been for the representations made to the Turks by him and his executive committee—that the hospital was international ground—being "wakf," or dedicated to the use of mental sufferers of all nationalities in Syria—there is no doubt that Jemel Pasha would have carried out his intention of using the hill on which it stands for gun emplacements. As it was, he respected the site as a religious foundation, and authorized a certain supply of food, which kept alive most of the patients and staff during the war, when other civilians perished all around, by the thousand, of famine. In 1917, when the victorious British troops arrived, the director was able to receive and treat a large number of General Allenby's men at the hospital during a serious epidemic of influenza, in recognition of which he received the O.B.E. It was perhaps after this time that he began to show his special qualities as an administrator. Out of the meagre funds obtainable for some years from Europe and America, he contrived to restore and re-equip the buildings and develop the thirty-six acres of land, so that by 1924 the place was ripe for expansion. Pavilion after pavilion has been built, under his personal supervision, without architect or contractor, also a model steam laundry: an artesian well of 400 feet was bored and a scheme of olive planting, olive pressing, and soap making started. In November last came the crowning achievement—to be able to build a new house for women entirely out of local funds. The Scottish house was opened in November last by the President of the Lebanese Republic, and this event and the completion of Dr. Watson Smith's twenty-fifth year of service were marked by the bestowal upon him of the highest decoration given to a foreigner—the Médaille d'Honneur du Mérite libanais du deuxième classe.

The death took place, in a nursing home at Edinburgh on June 10th, of Dr. JOHN MACKAY of Dall-Avon, Aberfeldy, Perthshire. Dr. Mackay was born in 1847, and after receiving his medical education partly in Aberdeen and partly in Edinburgh he qualified L.R.C.P., L.R.C.S. at Edinburgh, and graduated M.B. at Aberdeen in 1875. He proceeded to the M.D. of Aberdeen in 1879. After a short time as assistant in a Durham practice he became assistant to the late Dr. Irvine Pitlochry. In 1880 he began practice at Aberfeldy as successor to the late Dr. Reid. Here he worked for over half a century, and, in addition, acted as medical officer of health for the burgh of Aberfeldy, and as parochial medical officer for the parishes of Logierait and Dull. He was also medical officer for the combination poorhouse of Atholl, Weem, and Breadalbane. Dr. Mackay was a keen member of the British Medical Association, and served a term as president of the Association's Perthshire Branch. He took a great interest in local public affairs; for many years he was a member and chairman of the School Board of Dull Parish. He was an early supporter of the Volunteer movement, and maintained his connexion with the Volunteer Force for a number of years, retiring ultimately as Surgeon Colonel of the Fifth Volunteer Battalion of the Royal Highlanders (Black Watch). The interment took place at Aberfeldy cemetery on June 13th.

Dr. VINCENT WING TWINING, who died at Ryde on June 6th at the age of 73, was the youngest son of the late Dr. Edward Twining of Walthamstow. He received his medical education at Aberdeen, where he graduated M.B., C.M. in 1886. He was also a student at the Rotunda Hospital, Dublin. In 1893 he started practice at Llanwrtyd Wells, but removed to Salcombe in the following year on the death of his brother, Dr. A. H. Twining. There he remained until 1920, when he retired from general practice, and received various testimonials of friendship and appreciation from his colleagues and patients. He subsequently did occasional locumtenent work while his health permitted. Dr. Twining was for many years a member of the British Medical Association. His only son was killed in the war, but he is survived by his widow and a married daughter, who is also a member of the medical profession.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons this week passed the Finance Bill through report and read the Petroleum Production Bill a second time. The Estimates for the Ministry of Health and the Ministry of Labour were discussed. On the former, discussion was expected on water supplies and on slum clearance.

The Protection of Animals (Cruelty to Dogs) (Scotland) Bill was read a second time in the Lords on June 13th, and the Workmen's Compensation (Coal Mines) Bill a third time on June 14th.

The Statutory Salaries (Restoration) Bill was read a third time in the Commons on June 13th, and a first time in the Lords on June 14th.

The Gas Undertakings Bill was read a third time by the Commons on June 15th. It contains provisions against the imposition of conditions in leases or otherwise to prevent tenants of houses from receiving supplies of gas.

The House of Lords, on June 19th, read the Betting and Lotteries Bill a third time and the Statutory Salaries (Restoration) Bill a second time. The Unemployment Bill and the Licensing (Permitted Hours) Bill both passed through report.

On June 4th Lord Mamhead presided over a conference representing local authorities, medical organizations, newspaper proprietors, advertising agents, pharmaceutical manufacturers, distributors, vendors, and others interested to consider the Advertising of Medicines Bill, drafted by a committee under the chairmanship of Captain G. S. Elliston. All these interests reached a greater measure of agreement than had been attained hitherto. Several points were referred back to the drafting committee for further consideration. Until these have been settled no decision will be taken on the introduction of the Bill in the House of Lords or the House of Commons.

Compensation to Hospitals

Consideration of the Road Traffic Bill was resumed by a Standing Committee of the House of Commons on June 14th. A new clause dealing with remuneration for treatment, other than emergency treatment, rendered by hospitals, was brought up by Mr. Storey, who moved that the clause be read a second time. Its text was:

(1) Subject to the provisions of this Section where medical or surgical treatment is rendered to any person in any department of a hospital whether as an in-patient or as an out-patient in respect of bodily injury (including fatal injury) caused by or arising out

of the use of a motor vehicle on a road or in a place to which the public have a right of access the owner of the vehicle shall pay to such hospital the expenses reasonably incurred by the hospital in affording such treatment (other than emergency treatment within the meaning of Section (Payments and insurance in respect of emergency treatment of injuries arising from the use of motor vehicles on roads) of this Act) after deducting from such expenses any moneys actually received by the hospital in payment of a specific charge for such treatment (other than emergency treatment as aforesaid) not being moneys received under any contributory scheme. Provided that the amount to be paid under this Section shall not exceed £50 for each person in respect of treatment as an in-patient and £5 for each person in respect of treatment as an out-patient.

(2) Liability incurred under this Section by the owner of a vehicle shall, where the event out of which it arose was caused by the wrongful act of another person, be treated for the purposes of any claim to recover damage by reason of that wrongful act as damage sustained by the owner.

(3) A policy of insurance or a security in respect of third-party risks shall not be deemed to comply with the requirements of Part II of the principal Act unless the owner of the vehicle to which it relates is specified therein for the purposes of paragraph (*b*) of Subsection (1) of Section thirty-six or of Section thirty-seven of the said Act, as the case may be, and notwithstanding anything in the proviso to paragraph (*b*) of Subsection (1) of Section thirty-six of the principal Act any liability which may be incurred under this Section by the owner shall be deemed to be a liability required to be covered under that paragraph.

(4) A chief officer of police shall, if so requested by a hospital who allege that they are entitled to claim a payment under this Section, furnish to that hospital any information at the disposal of the chief officer as to the name and address of the owner and the identification marks of any motor vehicle which that hospital allege to be a vehicle out of the use of which the bodily injury arose, and as to the name and address of the authorized insurer who has issued a policy of insurance, or of the body or person who has given a security or made a deposit in relation to such vehicle.

(5) A sum payable under this Section shall be recoverable as if it were a simple contract debt due from the owner of the vehicle to the hospital.

(6) For the purposes of this Section the expression "hospital" means an institution (not being an institution carried on for profit) which provides medical or surgical treatment for in-patients; and the expression "expenses reasonably incurred" means (*a*) in relation to a person who receives treatment at a hospital as an in-patient an amount for each day such person is maintained in such hospital representing the average daily cost for each in-patient of the maintenance of the hospital and the staff thereof and the maintenance and treatment of the in-patients therein, and (*b*) in relation to a person who receives treatment at a hospital as an out-patient the reasonable expenses actually incurred.

(7) Subsection (2) of Section thirty-six of the Principal Act as amended by Section thirty-three of the Road and Rail Traffic Act, 1933, is hereby repealed.

Mr. STOREY explained that the clause provided for payment of hospital treatment, other than emergency treatment, up to a maximum of £50 for in-patients and £5 for out-patients, irrespective of the question of negligence. He contended that if the emergency treatment clause which the committee had previously passed was justified (reported in these columns on June 16th) it was even more right that treatment which cost the hospitals tens or hundreds of pounds should be met in this way. He submitted that the clause did not attribute the whole fault of accidents to the motorists. It provided that the cost of treatment should be borne, not by the hospital or by the patients who were not responsible for the change in road conditions, but by the motorist who was responsible for the change. Where it could be proved that some other party was directly responsible for the accident the clause gave the motorist the right of recovery. The compulsory insurance clauses of the Road Traffic Acts provided a means whereby the cost of treatment could be met without any appreciable burden being placed on individual motorists, and also a means by which payments for treatment could be distributed among the hospitals which rendered it. The clause adopted the analogy of workmen's compensation, where compensation was recoverable without proof of negligence on the part of the employer. In workmen's compensation such a breach of the principle that a man was liable only for his own negligence was felt to be the less of two evils, and in road accident treatments it would be the same. The increase in accidents costs the hospitals some £180,000 per annum. With the limit of £50, which the clause proposed, the sum which could be recovered would not amount to so much as £180,000, but even if that whole sum were recovered it would work out at only 1s. 7d. per head per motorist. After long experience as chairman of a hospital and of its finance committee he did not accept the argument that the cost of treating road accidents was met by subscriptions from motorists to hospitals. He did not believe that if the clause passed the hospitals would lose a penny in subscriptions. At present workmen subscribers to hospitals felt a grievance because money raised by them to treat the sick of the district was used for road accident cases. In the considered opinion of the representatives of the hospitals the present clause was a fair and simple solution of the problem, but if the Minister could not accept it Mr. Storey asked him to suggest an alternative. Mr. Storey also mentioned that another precedent for ignoring the principle that a man was liable only for his own negligence was found in the Air Navigation Act of 1920.

Sir F. FREMANTLE said there were other analogies also on this point. The Select Committee appointed by the House of Lords to consider the Bill promoted by Lord Moynihan and that promoted by Lord Danesfort had cited several, including the law of collision of two ships. Sir Francis said the strong feeling on the subject throughout the country had resulted in this clause. He hoped that if the Minister had not an alternative ready he would show he was prepared to help the hospitals to find a solution. Sir E. GRAHAM-LITTLE stated that the request for the clause came from all the authoritative bodies which dealt with the hospitals. King Edward's Hospital Fund had estimated the cost of a bed to a hospital to be roughly five guineas a week, to which overhead charges would add another guinea, even though there was no charge for professional treatment. Some hospitals might do it for three to four guineas per week, but the larger hospitals had an extensive system of special departments. So far from hospitals being supported by the contributions of rich people the general hospital at Coventry had five-sixths of its running costs defrayed by the workmen's associations of that town.

Mr. STANLEY asked the committee to come to a decision. He naturally felt sympathy for hospitals, but he protested against the suggestion that members who did not support the clause might be called to account by their constituents. On the clause with respect to payment to doctors he had warned the committee what would happen if a breach were made in the principle of responsibility for accident. The clause would select the motor owner as almost the only class in the country to be held responsible for an act not in any way neglectful, and, indeed, possibly caused by the negligence of someone else. He had previously told the committee that as an isolated case the practical injustice to the doctor was greater, but it was impossible to regard the doctor's case as an isolated incident in view of the further pressure to which the committee was subjected. The Bill was intended to deal with accidents on the road, and to secure among motor users a standard of conduct to which they would adhere voluntarily and not under the compulsion of the law. If motor users were to be regarded as always at fault they could not hope to build up among them the spirit which they desired. He dismissed, as unfair, the argument that the coming of the motor had put this responsibility on the hospitals, and therefore the motor owner should pay. By the invention of the internal combustion engine the hospitals had received hundreds of thousands of pounds through the generosity of such men as Lord Nuffield, and they could not ignore all the credit which was due to motors. To ordinary subscribers to hospitals the clause would mean the end of the voluntary hospital system as they understood it. If they were to be taxed to provide for the care of certain injured people if the injury arose in a special way, many subscribers would feel that they would in future limit their subscriptions by whatsoever return the hospitals could give them. In reply to the request that he should suggest an alternative, Mr. Stanley asked if the members who pressed the clause had ever tried appealing to motorists as a class. Had there ever been an attempt by the hospitals as a whole to try, with the help of motoring organizations and motorists generally, to set up a central fund from which relief could be given? Mr. TURTON said all the associations of hospitals in Yorkshire had appealed to motorists. Mr. STANLEY continued that he believed the immediate result from such an appeal would be better for the hospitals, and in the long view their future would be more assured. He believed that co-operation with the motoring interest would be much better advised than a method which, in fact, was nothing else but a tax upon motorists as a class.

Sir GIFFORD FOX said he came from a corridor constituency where an abnormal number of beds were occupied

by road accident cases. Last year the Hanley District War Memorial Hospital admitted twenty-two such cases, three of which were fatal. These involved a total of 564 days in hospital. The cost of their treatment was £237, of which £29 was received from insurance under the Road Traffic Act and third-party risk, and £73 from other sources, so that the net cost to the hospital was £135. About 10 per cent. of the beds occupied in the year were used for motor accident cases, and only 12½ per cent. of the cost was recovered. He put his name to the clause because he felt it was the opinion of the community. If, as the Minister suggested, a central fund was set up, why could not a grant be made from the money paid by motor owners in taxation? Mr. TURTON considered it was wrong for Parliament to give 12s. 6d. to the doctor for emergency treatment and not to deal with the great loss which hospitals were suffering all over the country. Mr. STANLEY asked whether Mr. Turton would say that, having passed the hospitals clause, the committee must extend the principle in the case of an injured man treated in his own home. Mr. TURTON replied that there was a legal liability on members of a family to support a relative, as was made plain in the Lunacy Act. He rested the case of the hospitals not so much on legal liability as on grievance. Doctors had rich patients as well as poor, but some hospitals on main roads were so filled with accident cases that they could not take any paying patients. Co-operation, Mr. Turton continued, had already been tried. A large association in the North of England was presided over by Lord Harewood for that object. Money had been obtained for hospitals, but not nearly enough.

Sir JOSEPH LAMB appealed for the clause to be withdrawn. Mr. ALLAN REID, who said he had been twenty-eight years on the board of management of voluntary hospitals in his constituency, hoped that some way would be found to compensate both doctors and hospitals other than that suggested in the clause. He believed that if the principle were adopted it would be the first stage towards the extinction of the voluntary hospital. Mr. GUY said machinery was already set up under the Road and Rail Act for payment to hospitals for treatment of out-patients or in-patients. That was only where negligence was admitted or proved. The proposal was to use the same machinery but to make the payments irrespective of negligence. He had asked the Edinburgh Royal Infirmary how the existing machinery under the Road and Rail Traffic Act worked. It had been able to recover the cost of treatment in about half the cases, but encountered difficulty in cases where there was a doubt as to negligence. In these the insurance companies offered the injured person £25 without any admission of liability, and said that was conditional on the hospital withdrawing its claim. That put the hospital in an unfair position, because if the hospital insisted on claiming, the injured person did not get a penny unless he fought the action in court, and so he put the blame upon the hospital. He thought the Minister would agree that this point should be provided for. He understood that before long an "omnibus" hospital Bill might be introduced, and he asked the Minister to consider whether some new remedy for this difficulty could not be provided in such a Bill.

Mr. STANLEY replied that in the discussion certain principles had been propounded which he looked upon as extremely dangerous, particularly the statement that once the committee accepted the doctor's clause the door was wide open for every extension of the principle that lack of negligence was no defence. He must make it clear that if the clause was withdrawn that action was not taken because he had promised some concession in the future. He was not bargaining for the withdrawal of a clause which raised a wrong principle. Mr. STOREY said, in withdrawing the clause, he and his friends did not take back what they had said. They merely made their appeal to the Minister.

On the motion that the clause be read a second time the clause was defeated by 21 to 6.

A clause dealing with hours of duty and periods of rest for employees driving motor vehicles was moved and withdrawn. A clause to restrict pillion riding, and the carriage of second persons on pedal bicycles not specially fitted for such transport, was moved and added to the Bill.

The Bill was then reported to the House, consideration on committee having been completed.

Hours of Shop Assistants

Discussion of the Shops Bill was resumed in the House of Commons on June 14th before a Standing Committee. Mr. RHYS DAVIES moved to leave out the provision in Clause 2 postponing for two years the introduction of a forty-eight-hour week for young persons employed in or about shops. He proposed to substitute the date June 30th, 1935. Mr. HACKING said the clause provided that in the transitional period of two years the maximum normal working hours should be fifty-two. The absolute limit, including permitted overtime, would be sixty hours in one week, which could not be worked on more than three occasions in the year. The committee rejected Mr. Rhys Davies's amendment by 18 votes to 3, but on the motion that Clause 2 stand part of the Bill the whole clause was deleted by 11 to 10. Mr. Hacking said the Government would ask the House during the report stage to restore the clause.

Consideration of the Bill was resumed in Standing Committee on June 19th. Clause 3 prohibits the employment of young persons between the hours of 10 p.m. and 6 a.m., except those engaged in the distribution of milk and bread, who are allowed to begin work at 5 a.m. The committee, by a majority of 17 to 9, gave the same exemption to distributors of newspapers. The committee adjourned until June 21st.

Aniline Dyes in Meat Marketing.—Dr. O'DONOVAN moved, in the House of Commons on June 7th, that an address be presented against a draft Order in Council under the Merchandise Marks Act, 1926, which was presented to the House on May 8th, 1934. He explained that this Order enjoined that imported frozen or chilled meat should bear an indication of origin branded or stamped, stencilled, or printed in ink or stain, durably and conspicuously, in letters not less than half an inch in height, at distances, in the case of chilled beef, of two inches in a line from the hock joint to the neck. This brand would withstand cooking, and would affect the appearance of the food, which was pleasurable to the healthy and necessary to the sick. A Government expert had given evidence that this meat might be stained with aniline dyes, dissolved in methylated spirit. If every butcher handling frozen mutton or beef appeared before his doctor every time he had a rash and complained it was due to aniline dye, the woes of all who had to sign certificates would be trebled. If a medical man suspected that a consumer of frozen meat had a stomach-ache due to aniline, the doctor would be compelled to notify the case at once under the London County Council General Powers Bill, which the House had lately passed. Dr. ELLIOT said the method of marking was already applied to home produce. There was no satisfactory alternative to marking the meat itself. The Order did not involve the use of aniline dye, and he had reason to suppose that soon after it came into force some such device as roller-marking by electricity would be in operation and would not involve the use of dyes. Dr. O'Donovan asked leave to withdraw his motion, but a division was challenged and the Order was approved by 95 to 22.

Malaria Outbreak in Bechuanaland.—Replying to Mr. Lunn, on June 13th, Mr. J. H. THOMAS stated that there had been an outbreak of malaria in districts of the Bechuanaland Protectorate. He had not received any detailed reports from the High Commissioner for South Africa as to mortality, but had no doubt these would be forthcoming as soon as the information was available. Prompt measures had been taken by the local administration to deal with the outbreak by sending medical officers and the necessary supplies of quinine to districts affected. Provision was made last year and this year for the relief of distress occasioned in the Protectorate by the disastrous drought in South Africa.

Research into Native Mentality in Kenya.—On June 13th Sir P. CUNLIFFE-LISTER told Dr. O'Donovan that he still awaited the views of the Governor of Kenya on the suggested research into native mentality on lines indicated by Dr. H. L. Gordon. He expected that the Governor would desire to consult his advisers.

Health of Children entering Elementary Schools.—Mr. RAMSBOTHAM told Viscountess Astor, on June 14th, that in the year 1933 95,328 children, or 16.3 per cent. of the children entering public elementary schools, whether at the age of 5 or earlier, were found to be in need of treatment for various defects, excluding uncleanliness and dental disease. Information was not available in respect only of children entering at 5, or as to the number or percentage of entrants suffering from defects requiring observation.

Vermin in Transit to Housing Estates.—In reply to Mr. Caporn, on June 14th, Sir HILTON YOUNG stated that the Public Health Act, 1925, made provision for the compulsory cleansing by local authorities of premises used for human habitation which were infested with vermin, and for the cleansing, disinfecting, and, if necessary, destruction of verminous articles found in any such premises. He had no reason to suppose that these powers were inadequate. There was no power to deal with articles which were verminous when they were in transit to housing estates; he considered it more practical to catch them before they were removed. He had recently issued to local authorities a circular and memorandum on disinfestation.

Country Districts and the Drought.—Replying to Major Carver on June 14th, Sir HILTON YOUNG said that rainwater, with proper storage, provided a reasonably adequate supply of water in country districts where other supplies were impracticable. He was issuing a leaflet on measures for conserving rainwater. Where emergency due to drought arose, local authorities and other water undertakers, in co-operation with the Ministry of Health, took measures to meet it by fresh supplies and emergency methods of distribution, which were suitable to the special needs of the locality, and varied greatly. The engineering inspectors of the Ministry advised on the measures to be taken. Local authorities' schemes for boreholes for common use were eligible for grant, but to provide separate waterworks for individual houses was not properly a public service.

Road Accidents: Negligence Against Dead Persons.—The Law Reform (Miscellaneous Provisions) Bill, which had passed the House of Lords, was considered by the Commons on June 15th. Sir DAVID SOMERVELL, Solicitor-General, moved the second reading. He explained that it was based on recommendations by a committee set up by the Lord Chancellor, and was intended to remedy hardships resulting from the old legal principle that a personal action died with the person. The Bill laid down that all causes of action subsisting against or vested in a deceased person, except for defamation or seduction, should survive or against or for the benefit of his estate. The real urgency of the Bill was to deal with street accidents. The injured person would have the same rights where the negligent motorist was killed as at present where the motorist survived. The Bill also covered cases where the injured person subsequently died. Subject to exceptions and safeguards there would in that case be cause of action. Mr. RHYS DAVIES protested against the proviso that the Bill should not apply to Scotland. The Bill was read a second time.

Protective Measures in Gas Warfare.—Replying to Mr. Kirkwood, on June 18th, Mr. DUFF COOPER said that training in defence measures against gas attacks, whether from the air or otherwise, was part of the normal training of the Army. The voluntary aid detachments provided by the British Red Cross Society undertook to assist the medical services of the Army should they be required in time of emergency, and measures of protection in gas warfare formed part of the training given to those detachments. Army officers were accordingly allowed to assist in this training by giving lectures. Mr. Kirkwood's question averred that Army officers had given lectures at Maryhill Barracks, Glasgow, to members of the Red Cross and voluntary aid detachments on how to deal with victims of gas attack from the air.

Notes in Brief

The number of persons in receipt of poor relief in England and Wales on May 26th, 1934, excluding rate-aided patients in mental hospitals, persons in receipt of domiciliary medical relief only, and casuals, was 1,349,707. The corresponding number on May 27th, 1933, was 1,286,640.

The report of the chief inspector of factories and workshops for 1933 will be issued in the middle of July.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

The Appointments Committee of the Faculty of Biology "B" will shortly proceed to appoint two Demonstrators in the Department of Anatomy, whose duties will commence on October 1st, 1934. Applications are invited from candidates with laboratory experience, particularly in anatomy, physiology, pathology, embryology, or radiology. Facilities will be provided for research in anatomy and related branches of the subject. Particulars as to stipend and duties may be obtained from the Secretary General of the Faculties, The Registry, Cambridge, to which address applications should be sent by July 1st.

At a congregation held on June 16th the following medical degrees were conferred:

M.B., B.CHIR.—T. W. Smailes.
M.B.—J. S. Mitchell.
B.CHIR.—*C. P. F. Boulden, S. A. Propert.

* By proxy.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examinations indicated:

M.D.—H. Rogers (with distinction), F. H. Bodman, J. J. J. Giraldi, N. L. Price.
CH.M.—G. F. Langley (with distinction).
FINAL M.B., CH.B.—*Part I:* M. A. Nicholson, B. Ridgway. *Part II:* A. C. Molden (first-class honours with distinction in surgery, obstetrics, and public health), A. G. W. Branch (second-class honours with distinction in obstetrics), Rosalind M. S. Derham (second-class honours with distinction in public health), C. H. G. Price (second-class honours), Grace J. V. Ball, Dorothy E. Barber, Violet Fry, N. Greenberg, G. L. L. Gurney, T. R. V. Gurney, Gwladys R. Llewelyn, R. A. Mathews (with distinction in surgery and public health).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A meeting of the Council of the Royal College of Surgeons of England was held on June 14th, when the President, Sir Holburt Waring, was in the chair.

Appointments

The President reported his appointment of Professor William Wright as Thomas Vicary Lecturer.

A letter was read from Mr. Alan Newton, Censor in Chief of the Royal Australasian College of Surgeons, reporting the following nominations by the council of that College for the Primary Fellowship Examination, to begin in Dunedin, N.Z., on November 29th, 1934:—Assessor in Anatomy: Professor W. P. Gowland, F.R.C.S. Assessor in Physiology: Professor John Malcolm. Appointed to act as superintendent of the examination: Mr. Herbert Chapman, Registrar of the University of Otago.

Examiners

The following examiners were elected for the ensuing year:

Fellowship.—Anatomy: J. B. Hume, Grant Massie, G. Gordon-Taylor, P. N. B. Odgers. *Physiology:* G. A. Buckmaster, D. H. de Souza, S. Wright, H. Hartridge.
Under the Conjoint Board.—Elementary Biology: T. J. Evans, G. P. Mudge, C. C. Hentschel, A. J. Grove. *Anatomy:* W. E. Le Gros Clark, H. A. Harris, E. P. Stibbe. *Physiology:* A. St. G. J. McC. Huggett, Samson Wright. *Midwifery:* L. C. Rivett, M. Donaldson, A. C. Palmer, V. F. Lack. *Pathology:* C. E. Shattock, R. Davies-Colley, R. G. Canti, J. McIntosh. *Diploma in Public Health:* Part I, C. C. Okell; Part II, J. Fenton. *Diploma in Tropical Medicine and Hygiene:* Pathology and Tropical Hygiene, D. S. Harvey; Tropical Medicine and Surgery, G. C. Low. *Diploma in Ophthalmic Medicine and Surgery:* Part I, Sir Stewart Duke Elder, C. B. Goulden; Part II, R. F. Moore. *Diploma in Psychological Medicine:* J. G. Greenfield. *Diploma in Laryngology and Otology:* Part I, E. M. Woodman, S. R. Scott; Part II, T. B. Layton. *Diploma in Gynaecology and Obstetrics:* J. D. Barris. *Diploma in Medical Radiology:* Part I, J. M. Woodburn Morison; Part II, J. H. Douglas Webster.
Dental Surgery (Surgical Section).—R. J. Howard, C. E. Shattock, C. P. G. Wakeley, P. H. Mitchiner, E. G. Slesinger, R. M. Vick.

Fellowship

Diplomas of Fellowship were granted to the following thirty-six successful candidates at the recent examination:

G. F. Rowbotham, N. L. Shepperd, R. W. Doyle, W. Buckley, W. A. Elliston, G. K. McKee, S. W. Holmes, C. E. P. Markby, J. K. Stanger, R. J. Furlong, M. W. C. Oldfield, G. T. Partridge, E. A. Devenish, A. L. Eyre-Brook, R. S. Lewis, H. R. Thompson, H. F. Moseley, H. J. B. Atkins, R. G. Pulvertaft, A. Hilmy, K. S.

Ayyar, D. B. McGavin, J. R. Vaid, R. D. Ayyar, S. Sunkavally, F. N. Chenhall, E. J. Collins, J. V. Guinane, A. I. Hunter, S. Krantz, J. P. F. Lloyd, A. Logan, C. J. Lord, S. B. Morris, D. G. Radcliffe, E. B. Whittingham.

Membership

Diplomas of membership were granted to H. C. Hugh, B. L. E. Wong, A. T. Roden.

APOTHECARIES' SOCIETY

In connexion with the International Conference on the Standardization of Vitamins meeting last week in London, under the auspices of the Health Committee of the League of Nations, the Master (Dr. J. O. Wakelin Barratt), the Wardens, and the Court of Assistants of the Society of Apothecaries of London held a reception at their Hall in Blackfriars on the evening of June 14th. Invitations were issued to various British workers in the field of vitamin research, and to physicians and physiologists who desired the opportunity of meeting the research workers attending the conference. Among the latter who attended the reception were: Professor E. Mellanby (Medical Research Council), Professor J. C. Drummond (University College), Professor H. von Euler (Stockholm), Professor L. S. Fridericia (Copenhagen), Professor B. C. P. Jansen (Amsterdam), Professor P. di Mattei (Pavia), Dr. E. M. Nelson (Washington, U.S.A.), Mme Randoin (Paris), Professor H. Steenbock (Wisconsin, U.S.A.), Professor A. Szent-Gyorgyi (Szeged), Dr. W. R. Aykroyd (League of Nations, Geneva), Dr. Harriette Chick (Lister Institute of Preventive Medicine), Professor J. C. G. Ledingham (Director of the Lister Institute), Dr. K. Coward, Professor A. Jung (Basel), and Dr. C. Lormand (Paris).

Medical News

The Board of Control (Caxton House West, Tothill Street, S.W.1) has issued a revised list of medical practitioners in England and Wales who have been approved by the Board for the purpose of making recommendations under Sections 1 (3) and 5 (3) of the Mental Treatment Act, 1930. The names are given first in alphabetical order with full addresses, and are then regrouped geographically.

The annual general meeting of the Fever Group of the Society of Medical Officers of Health will be held at 1, Upper Montague Street, W.C., on Friday, June 29th, at 4 p.m., when Professor Ulrich Friedemann will read a paper on "Malignant Diphtheria, with Observations on Cardiovascular Failure and Methods of Treatment." A meeting of the council of the group will be held at 3 p.m.

The annual meeting of the National Institute for the Deaf will be held in the Library, Baptist Church House, 4, Southampton Row, W.C., on Wednesday, June 27th, at 3 p.m., when Lord Charnwood will preside and give an address.

The Institute of Malariology, directed by Professor Bastianelli, has arranged a post-graduate course from July 16th to September 6th for Italian practitioners, and from July 10th to September 10th for foreigners, when lectures will be given by S. R. Christophers, S. P. James, G. Pittaluga, N. H. Swellengrebel, and Warrington Yorke. The fee is 200 lire. Further information can be obtained from the Society of the Institute, Policlinico Umberto 1, Rome.

The Fellowship of Medicine announces that the next lecture-demonstration, in the series being given at 11, Chandos Street, W., will take place on June 26th at 2.30 p.m.; subject, "Nephritis." There will be no lecture on July 3rd, but the series will resume on July 10th; subject, "High Blood Pressure." There will be a week-end course in medicine and surgery at the Metropolitan Hospital, Kingsland Road, on June 30th and July 1st, and a week's course in ophthalmology at the Central London Ophthalmic Hospital from July 2nd to 7th. A week-end course in general medicine and surgery has been arranged at the General Hospital, Southend-on-Sea, on July 7th and 8th. Other forthcoming courses include urology at All Saints' Hospital, July 9th to 28th; dermatology at the Blackfriars Skin Hospital, July 9th to 21st. A demonstration of dermatological cases will be given by Dr. O'Donovan at the National Temperance Hospital on July 14th at 3 p.m.

The British Health Resorts Association is holding a conference at Cromer and Sheringham from June 29th to July 1st, by invitation of the respective urban district councils and the local medical profession. There will be two discussions: one on "The Seaside Resort in the Treatment of Respiratory Diseases," opened by Dr. R. A. Young, followed by Dr. L. S. T. Burrell and Dr. A. J. Morland; and the second on "Climatic and Allied Factors in the Incidence of Disease and its Treatment on the East Anglian Coast," opened by Dr. R. Fortescue Fox, followed by Dr. F. W. Burton-Fanning, Dr. Wilfred Pearson, and Mr. L. C. W. Bonacina.

Dr. O. Leeser of Stuttgart will give an address on "Constitution and Constitutional Treatment" at the London Homoeopathic Hospital, Queen Square, W.C., on Thursday, June 28th, at 5.30 p.m. Medical men and women wishing to attend are asked to notify the honorary secretary of the British Homoeopathic Society at the hospital.

The joint conference of the Federation of Cremation Authorities in Great Britain and of the National Association of Cemetery and Crematorium Superintendents will be held in the Council House, Birmingham, from June 25th to 28th. Sir John Robertson, M.D., and Sir Gilbert Barling, Bart., F.R.C.S., will contribute papers.

An International Congress of Medicine applied to physical education and sport, and organized by Professor Latarget, president of the International Association of the Medicine of Sport, will be held at Vittel from September 2nd to 4th under the presidency of Professor Paul Carnot. Further information can be obtained from the general secretary, Dr. Bolgey, Société Générale des Eaux, Vittel, Vosges.

In *Nature* of June 16th H. Dam of Copenhagen describes a haemorrhagic condition in chicks closely resembling scurvy. As vitamins A, D, B, and B_2 were present in the experimental diet, and as vitamin C had no effect in controlling the symptoms, he concludes that the cause of the disease is a deficiency in an antihaemorrhagic factor different from vitamin C and occurring in cereals and seeds.

The issue of *Rassegna Internazionale de Clinica e Terapia* for April 30th is devoted to a description of the mineral spas of Italy.

The issue of *Medizinische Klinik* for June 8th contains a sympathetic obituary notice of Dr. William Welch by Professor W. Kolle of Frankfurt.

The Trustees of the Lady Tata Memorial Trust, on the recommendation of the Scientific Advisory Committee, announce the award of the following international scholarships, each of the value of £400, for the academic year 1934–5, for research work in diseases of the blood, with special reference to leukaemias: Dr. W. Büngeler (Danzig), Dr. L. Doljanski (Copenhagen), Dr. M. C. G. Israels (Manchester), Dr. C. Oberling (Paris), Dr. J. Engelbreth-Holm (Copenhagen), Dr. M. O. K. Jörgensen (Aarhus, Jutland, Denmark), Dr. R. Meier (Leipzig), and Dr. Lucy Wills (London).

The King has appointed Dr. J. Cran, O.B.E., V.D., to be a Member of the Executive Council of the Colony of British Honduras.

The following medical men were called to the Bar on June 13th: Dr. W. D. R. Thompson (Inner Temple), and Dr. W. A. McE. Stewart (Middle Temple).

The Nobel prize for literature for 1933 has been awarded to the Finnish novelist, F. E. Sillampee, who is a doctor of medicine, aged 45.

A Hispano-American Association for Medico-Biological Studies has recently been founded at Madrid, with Dr. Collazo of Uruguay as president and Professor Pittaluga of Spain as vice-president.

There has been a reduction of 35 per cent. in the number of fatal accidents in the New York State industries during the last four years.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Guava Leaves for Dysentery

"W. G. T." writes: Has any reader, with South African experience, knowledge of the treatment of dysentery with a decoction of guava leaves? I am given to understand that it is extensively used by the natives, and should like to know the strength and dosage used, and also if there are any harmful effects.

Insect Bite Causing Gangrene of Finger

Dr. EDWARD C. B. IBOTSON (Jersey) writes: A very healthy man, aged 33, while picking gooseberries on June 10th, was bitten on the tip of the right index finger by a small black beetle; it was tiny, but stuck its proboscis in deeply, requiring force to remove it. He did not preserve the beetle. He came to me on the 13th. There was a sulcus in the finger and a ring of gangrenous skin surrounding and constricting the end of the digit, great pain, and swelling of the proximal end. I applied a kaolin poultice. On the 15th I divided the thick band of gangrenous skin which was strangling the finger. Kaolin was continued. On the 16th there was much improvement. Has anyone met with a similar case? And what is the creature which causes dry gangrene? I have never before encountered such a case.

Vaccine Treatment of Pertussis

Dr. GEOFFREY DUDLEY (Stourbridge) writes: In the *Journal* of June 9th (p. 1047), in the reports of societies, Dr. W. Gunn, discussing whooping-cough, is reported to have said that "Vaccines prepared from the Bordet-Gengou bacillus had proved useless—and occasionally dangerous—in treatment." I have used vaccine for treatment in many cases, apparently with success, and certainly without ill effect, but I should be glad to know what the possible dangers are.

Pruritus with Jaundice

Dr. S. LEIGH COX (Torquay) writes, in answer to the inquiry made by "P. J. M." in the *Journal* of June 16th, with reference to intolerable itching caused by jaundice: I have found that in similar cases the administration of calomel, 1/10 or 1/6 grain t.d.s., materially improves the pruritus. I usually recommend that the patient has a week "on" and a week "off" this regime, continuing the alternate-week system until relief is obtained. I find that small doses such as these are well tolerated, even where there is normally an idiosyncrasy to calomel.

Dr. F. B. JULIAN (Liverpool) writes: I would suggest dolichos pruriens. I have been able to control this maddening symptom with this drug when no other measure had the slightest effect. The tincture may be obtained from Messrs. Nelson, 73, Duke Street, Grosvenor Square, London, W.1, in the 1x potency. The dose is two to three drops thrice daily in water.

LETTERS, NOTES, ETC.

Reflex Effects of Head Posture

Dr. A. MURDOCH (Bexhill) writes: Is any significance to be attached to the results of the experiments on the decerebrate animal, and, if so, can they be applied in any shape or form to the prevention and treatment of disease? The decerebrate animal is an automaton to all intents and purposes, as the conscious directing faculty has been destroyed, but it presents certain constant characteristics—namely, (1) a greater degree of tonicity of all the voluntary muscles of the body, producing a greater degree of rigidity throughout the body; (2) what is most striking—a responsiveness of any alteration of the position of the head in its relation to the spine. If it is true of the decerebrate animal that the position of the head in its relation to the spine produces these responses throughout the whole body, does it apply to the cerebrate conscious animal man? The decerebrate animal cannot alter the position of its own head, but cerebrate man can, and yet for all practical purposes man does not alter the poise of his head from its habitual static position when engaged in any activity. Is the reason for this to be sought in the decerebrate animal experiments—namely, that if he were to alter the relative position of the head to the spine he would automatically alter reflexly all the relationships of his body parts, and thus produce a condition which is so unfamiliar to him as to prevent him from doing easily, if at all, what he intended to do? If this is so—and it can be shown that bodily conformation and the relationships of the internal organs depend on the position of the head—then, by altering the position of the head, changes in the bodily conformation and relationships of the internal organs can be effected and used in the prevention and treatment of disease. I have been prompted to write this letter because of a personal experience. I wished to know if any change took place in the position of my own stomach after a barium meal, when I changed the position of my head from a forward and upward position to a backward and downward position. Dr. Overend, the radiologist to the Buchanan Hospital, St. Leonards, and to the Bexhill Cottage Hospital, watched the screen and then took two photographs on the same film. He noticed that the level of the stomach varied as much as three inches in the two positions. He also noticed that the bases of both lungs showed greater clearness in the first than in the second position. Can this be produced by anyone contracting his abdominal muscles without any reference to a change in the position of the head? Many practical questions might be asked of our physiologists, but the following appear to me to be of primary importance: Does it matter how anyone carries his head? Does the position of the head affect our bodily conformation and all our automatic reflexes? Does it affect the functioning of the abdominal parietes as an efficient abdominal support to the abdominal organs, to say nothing of the support of the abdominal blood pool? Has it any effect on the functioning and tonicity of the voluntary muscular system? Does it affect the movements of the thorax with corresponding effects on the lungs and heart?

Disclaimer

Dr. A. J. BYRNE (Leyton, E.10) writes to disclaim any responsibility for a laudatory reference to him by a patient, which has appeared in a local newspaper. The notice was published without his knowledge or consent.

"Indoxyluria and Indoxylaemia"

A Correction

The reference to the journal from which abstract No. 478, in our *Epitome* of June 16th (p. 93), was made was erroneously printed. It should read *Bull. et Mém. de la Soc. de Méd. de Paris*, April 13th, 1934, p. 247.

Mr. Henry Kimpton, medical publisher and bookseller, 263, High Holborn, W.C.1, has issued a new catalogue of second-hand works on urology, and will send copies to any reader who applies.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 38, 39, 40, 41, 42, 43, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 332.